STORAGE NETWORKING WORLD
Corner Banca's Charles Inches and other IT execs hit vendors over price gouging. **PAGE 7**

SECURITY MANAGER'S JOURNAL
C.J. Kelly tries to secure the data in all those Access databases that employees are creating. **PAGE 38**

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Windows Ups Appeal of Macs

XP support makes Apple's hardware a more viable choice, say IT managers

BY KEN MINGIS AND LINDA ROSENCRANCE

Apple Computer Inc.'s development of software that lets Intel-based Macintosh systems run Windows XP natively met with the approval of several Mac-friendly IT managers, who said last week that Apple's embrace of Microsoft's operating system should make it easier to deploy the company's hardware.

Until now, Mac users who needed to run some Windows applications had to do so in emulation mode using tools such as Microsoft Corp.'s Virtual PC, which exacts a serious performance toll. But Apple's Boot Camp software, which was released for public beta testing with lit-

Macs, page 16

INSIDE
Michael Gartenberg and Frank Hayes disagree about what Windows on the Mac will mean for corporate IT.
Pages 24, 62

New Database Rejects Eligible Calif. Voters

Troubled system built to comply with federal law

BY MARC L. SONGINI

California's new voter registration database — whose creation the federal government once called a model for other states — may prevent thousands of eligible voters from casting ballots in a June 6 statewide election, officials fear.

Since the database was installed last December, the voter registration process has been invalidating numerous registrations, mostly as a result of minor data-entry problems.

For example, 14,629 out of 34,064 voter registration forms

Voters, page 60

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The job has changed a lot in the past few years: greater immersion in the business, tighter deadlines, more time zones and trickier politics.

Welcome to the world of the . . .

New Project Manager

POLLY BECKER

Page 43

Census Counts Itself As Big Handheld User

Feds will roll out 500,000 devices at a cost of $600M

BY MATT HAMBLEN

Federal census takers will use wireless handheld computers instead of pens and paper when they next hit the streets in 2010, provided that a $600 million project designed to automate the collection of census data goes as planned.

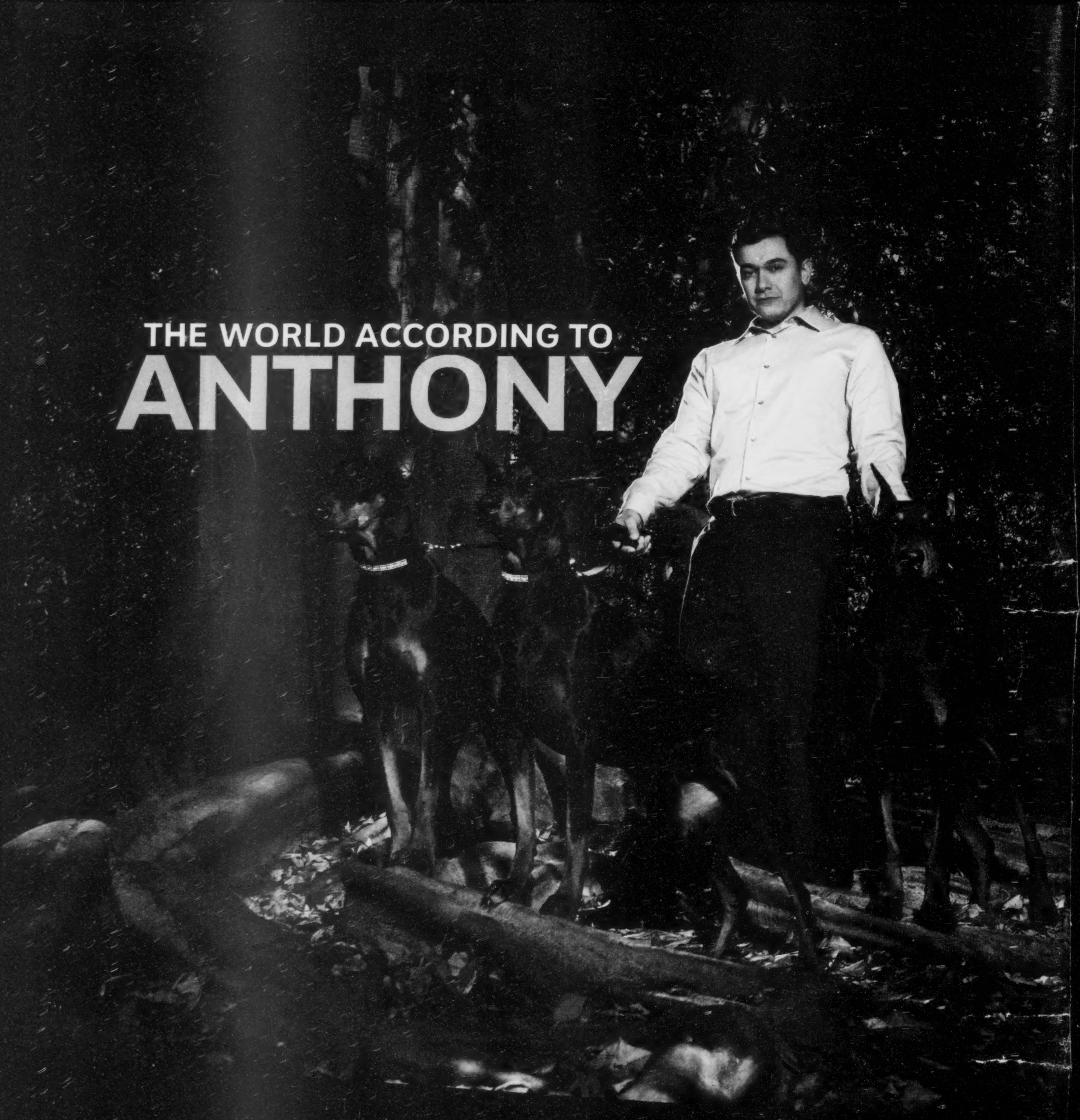
The U.S. Census Bureau last week officially signed a deal to buy about 500,000 handhelds and related technology from a team of vendors led by Harris Corp. The five-year contract awarded to Harris and its partners covers all aspects of the Field Data Collection Automation Project, according to Census Bureau officials.

Despite the project's steep cost, the use of handhelds should save the government "millions of dollars" by reducing the time it takes census workers to gather data, improving the information's accuracy and minimizing the need to process paper census forms, said Edwin Wagner Jr., the Census Bureau's project manager.

The pocket-size handhelds will run Microsoft Corp.'s Windows Mobile 5.0 operating system and be made

Census, page 16

ONLINE
Census Bureau project manager Edwin Wagner Jr. discusses the handheld rollout.
QuickLink a8520



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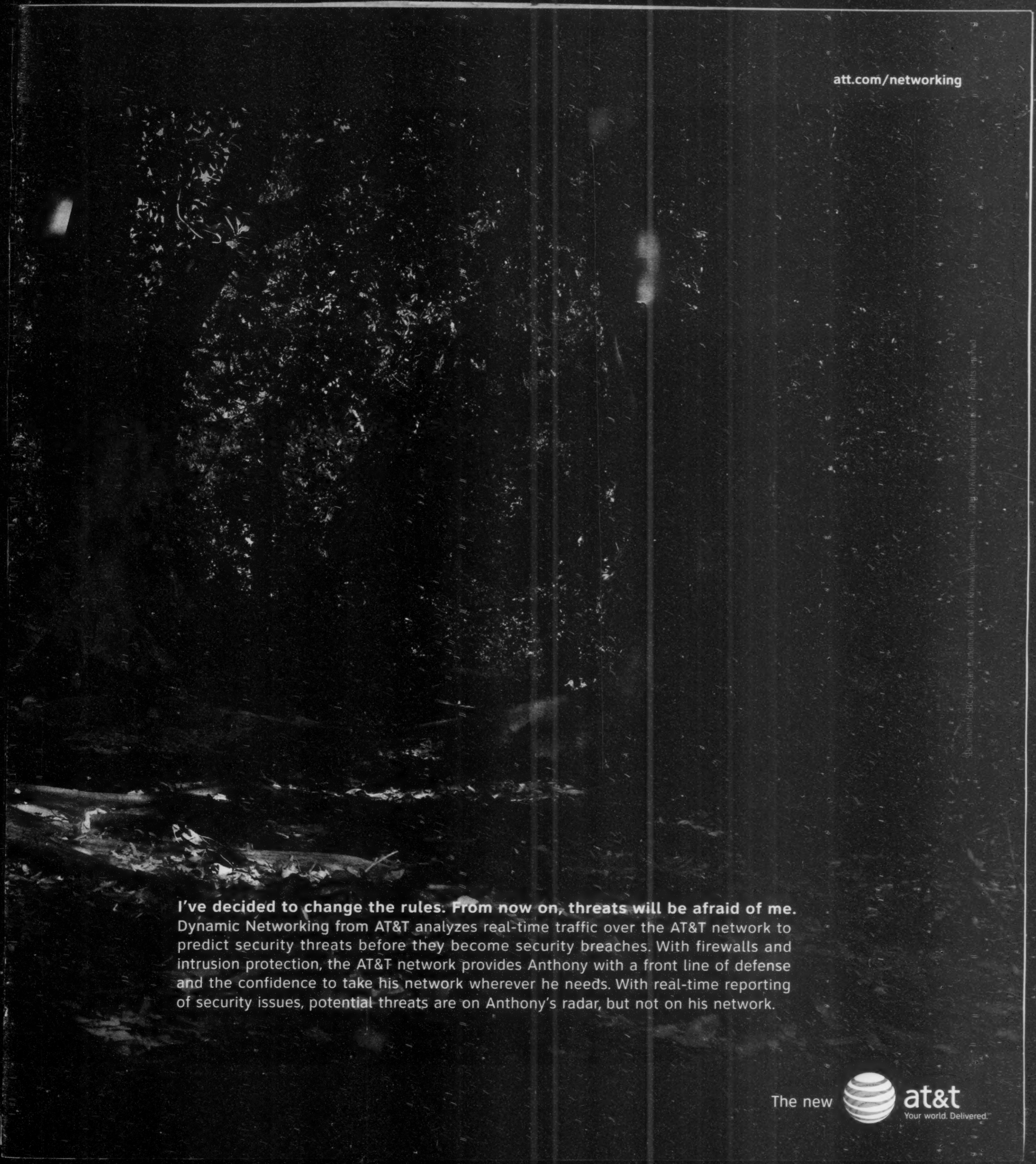

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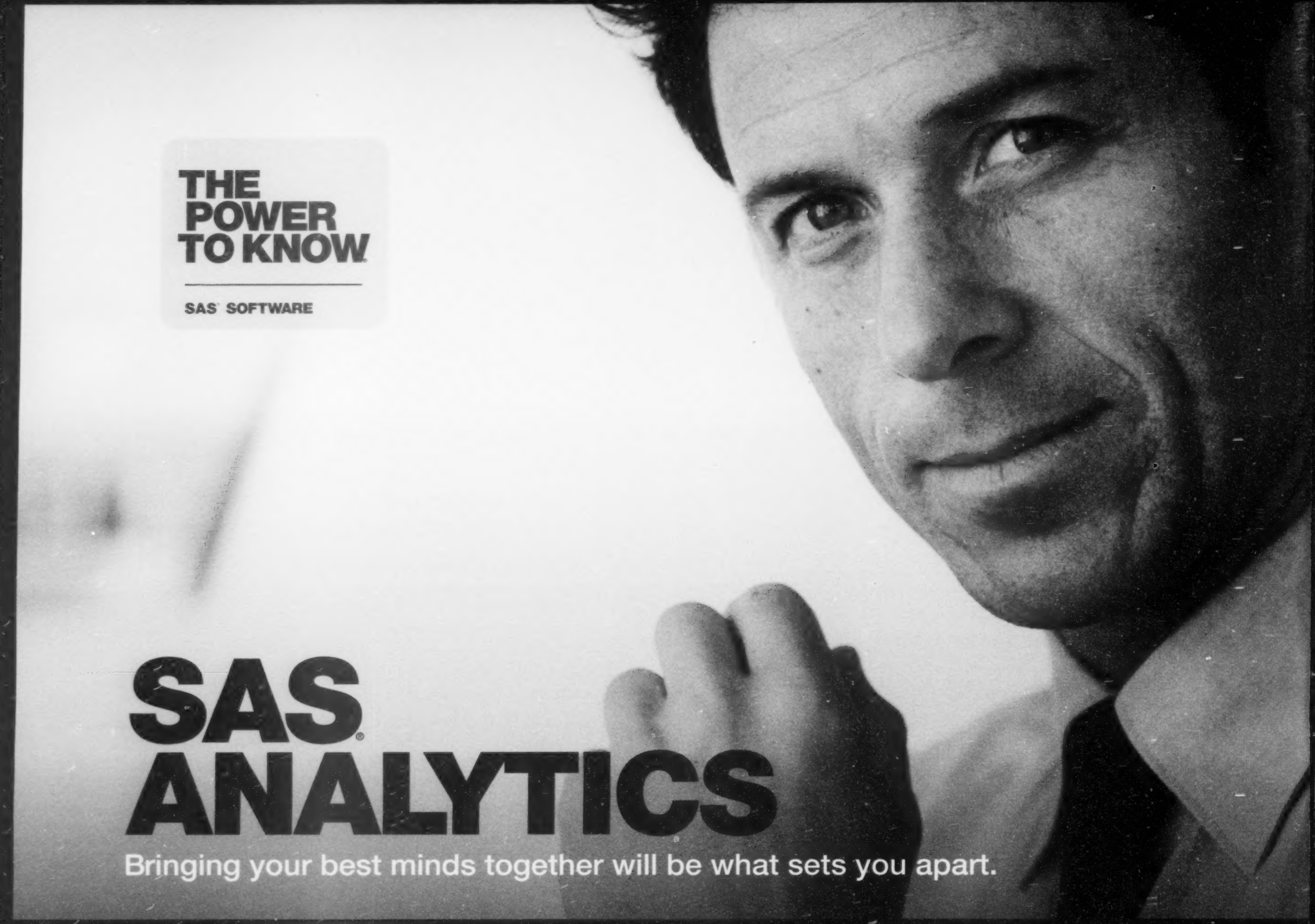
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CONTENTS

04.10.06

Reality Maps

In the Technology section: Application-mapping software is becoming an essential tool for organizations that must keep track of their IT assets, say IT executives such as David O'Neill of Boise State University. **Page 29**

Community Colleges Get Real

In the Management section: Some community colleges are overhauling their IT programs with help from real-world advisers, like Boeing's Don Alishio, who's part of a group of business people in the Auburn, Wash., area that helped Green River Community College revamp its curriculum. **Page 52**

NEWS

6 **Multisourcing deals** require a disciplined approach to managing vendors, according to attendees at a Gartner conference.

7 **Storage Networking World: IT executives** say storage pricing is inflated; and Intel agrees to resell EMC's low-end disk arrays. Plus a Q&A with Andy Monshaw, who heads system storage at IBM.

12 **Information security policies** must be focused, easy to understand and enforceable, say IT managers at InfoSec World.

12 **Microsoft** plans to support the mobile version of SQL Server on all versions of Windows.

14 **Global Dispatches:** U.S. trade officials criticize China's technology policies; and South Korean trade regulators check in on Qualcomm and three handset makers that use its wireless chips.

14 **Vendors offer** hosted business intelligence software to help IT managers cut costs and expand access to BI data.

15 **IBM adds** several SOA tools and services that users say can ease the task of building service-oriented architectures.

20 **Microsoft's CRM software** attracts converts from Siebel.

21 **Novell** struggles to maintain its customer base in Utah, the former site of its headquarters.

60 **Florida** subpoenas three vendors of voting machines to find out why they won't do business with one of its counties.

TECHNOLOGY

34 **Full Service.** Companies are looking to technologies that support many e-services options and help agents move smoothly among channels to provide an integrated response to customers.

36 **QuickStudy: Ultrawideband.** This wireless communications technology transmits large amounts of data over a short distance using very low power. It sends short-duration, precisely timed digital pulses across several frequencies simultaneously.

38 **Security Manager's Journal: Securing Data When Data Is Everywhere.** C.J. Kelly discovers that users are creating Access databases and realizes that they are yet another way for sensitive data to be compromised.

MANAGEMENT

43 **The New Project Manager.** Heavy business immersion, global teams and seat-of-the-pants execution, as well as tougher time and budget constraints mean the challenges of project management have never been greater.

48 **Q&A: The Real Value in Sarbanes-Oxley.** Companies are finding unexpected value in their Sarbanes-Oxley compliance efforts. *Harvard Business Review* authors Lee Dittmar (left) and Stephen Wagner explain how.

OPINIONS

8 **On the Mark: Mark Hall** reports on a service that lets mobile workers register their laptops against a database of Wi-Fi access points so their employers can quickly locate them.

24 **Don Tennant** saw signs of disenchantment at last week's Storage Networking World conference — enough to reveal how seeking alternatives to the status quo has become a way of life.

24 **Michael Gartenberg** thinks Intel Macs that can run Windows should get IT's attention.

25 **Michael H. Hugos** explains how easy it can be to remove the complexity from an IT project.

40 **Curt A. Monash** says a good GUI is the most important feature a product can have.

56 **Bart Perkins** offers advice on how to avoid eight potholes that can make your route to effective chargeback bumpy.

62 **Frankly Speaking: Frank Hayes** doesn't think Apple is making a play for the corporate market with Boot Camp. But with Macs able to run Windows, IT will no longer be able to say no to those status-seeking execs who see Apple's sleek machines as enviable toys.

DEPARTMENTS/RESOURCES

At Deadline Briefs 6
News Briefs 8, 12
Letters 25
IT Careers 58
Company Index 59
How to Contact CW 59
Shark Tank 62

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FAQ: Macs Running Windows – What You Should Know

OPERATING SYSTEMS: Find out which hardware will run XP using Apple's new Boot Camp software, learn what it means for Microsoft, and get the scoop on caveats you should be aware of before you start installing. **QuickLink a8470**

XP on a Mac? Readers Weigh In

OPINIONS: After Apple announced that Windows can now run on Intel-based Macs, readers were quick to send in their thoughts. **QuickLink a8480**

When 'Supernova Burnout' Grinds at Your Psyche

CAREERS: If job stress is rearing its ugly head, these four steps from *CareerJournal.com* can help. **QuickLink a8510**

Certification: Is It Worth It?

NETWORKING: Those initials after your name can help you land a job and get more pay, but solid experience in handling real-world problems is still key. **QuickLink a8460**

Test Your Disaster Recovery Plan

NETWORKING: Columnist Sandra Gittlen recommends eight steps to ensure that your network is ready to handle any emergency. **QuickLink a8490**

Are Your Data Exports From Europe Legal?

OPINION: Privacy officer Jay Cline warns that moving employee or customer data out of Europe is illegal unless you follow the European Union's privacy directive. He identifies four ways to do it but cautions that each one is imperfect. **QuickLink a8500**

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AT DEADLINE

Microsoft to Ship IE Patch on Tuesday

Microsoft Corp. is set to release five security patches tomorrow, including a fix for an Internet Explorer bug that hackers have been exploiting during the past two weeks. Microsoft will also offer fixes for three bugs in Windows and another for an unspecified problem in the Microsoft Office bundle. Microsoft offered few details on other patches, except to say that some will require that the computers be restarted.

SAP Slowly Enters Hosted App Business

SAP AG will gradually expand its hosted software business, as long as it doesn't "cannibalize" its enterprise software business, CEO Henning Kagermann told reporters last week. Kagermann said SAP will work to keep up with the on-demand business of rivals Oracle Corp. and Microsoft Corp. but added that "we'll never substitute our core business. [On-demand] will be an additional revenue stream."

Turbolinux Buys Maker of PHP Tools

Linux operating system supplier Turbolinux Inc. has agreed to buy a 90% stake in Zend Japan Ltd., a maker of tools based on the PHP scripting language. Turbolinux bought the stake from Open Source Japan Ltd., Zend's parent company, with a view to increasing distribution of Zend's tools for building Web-based database applications.

Hours-Long Outage Affects MSN Search

Microsoft Corp.'s MSN search engine, the third most popular in the U.S., suffered an hours-long outage late last week as queries returned an error message instead of Web page results. The outage began around 8:30 a.m. Pacific Daylight Time last Thursday and ended around noon, a spokeswoman said. The company was working to find the cause of the problem late last week.

Multisourcing Adds to IT Management Load

Disciplined approach is needed to control multiple outsourcing vendors

BY PATRICK THIBODEAU
ORLANDO

NONE OF the IT managers in the audience at a Gartner Inc. outsourcing conference here last week seemed to bat an eye when they were warned that a lack of discipline in managing multisourcing relationships could result in "large-scale business disruption."

Gartner analyst Linda Cohen raised the specter of business disruptions after telling attendees that they need to develop disciplined approaches to outsourcing, not ad hoc ones — especially as their companies adopt multisourcing strategies and sign contracts with more and more IT services providers.

"You are heading for a much more complex operating environment where you have more services delivered externally," Cohen said.

Strategic Responsibilities

The key to successfully managing multiple outsourcing vendors, according to IT executives from Du Pont Co. and ABN Amro Bank NV who attended the Gartner conference, is retaining strategic planning and architecture design responsibilities in-house.

By doing so, "you're responsible for your own destiny in defining how the systems work together," said Bruce Jacobs, CIO at ABN Amro's North American operations.

Amsterdam-based ABN Amro is outsourcing its IT infrastructure management, application development and telecommunications services.

For example, the banking company finalized application development deals last September with five vendors, including Accenture Ltd., IBM and India-based firms Infosys Technologies Ltd., Patni Computer Systems Ltd. and Tata Consultancy Services Ltd.

The five vendors compete for individual application services contracts but must work as a team in a "peer-to-peer relationship," Jacobs said. In effect, ABN Amro has created an "internal market" for contracting application development work globally, he explained.

To manage the different service providers, ABN Amro kept overall IT management and strategic planning internal and assembled IT teams with people who have strong business knowledge, Jacobs said.

The bank has also established subject-matter experts — staffers who are highly experienced, for instance, in how payment or trading systems function. They work with ABN Amro's IT architects and relationship management staffers to help ensure that the bank's systems meet business needs, according to Jacobs.

In addition, ABN Amro has created a requirements analyst job function with responsibility for turning business requirements into technical specifications for the outsourcing vendors. And just to be safe, it has retained some in-house coding capabilities "as insurance," Jacobs said.

Du Pont signed an outsourcing contract with Computer Sciences Corp. in 1997 and now also has deals with Accenture and other vendors.

Maryann Holloway, director of alliance management and operations at the Wilmington, Del.-based chemical company, said it's important "that both sides understand what their roles are and what they are going to deliver" as part of an outsourcing relationship.

To help ensure that the outsourcing vendors it works with meet its services delivery requirements, Du Pont has retained all of its top IT management positions internally, Holloway said. The company tries to fill those jobs with experienced managers who are in the middle of their careers. "We really look for IT leadership skills," she said. ▸

Outsourcing Forecast

- Gartner predicts that the **worldwide market** for IT and business process outsourcing services will increase from $582 billion in 2004 to **$769 billion in 2009.**
- About 60% of outsourcing users plan to sign **contracts with three or fewer vendors**, according to a survey of 758 companies that Gartner conducted last year.
- Through 2008, nearly two-thirds of IT outsourcing contracts will be signed primarily to achieve **short-term, cost-focused objectives**, Gartner said.

Outsourcing Leaders Fuse IT and Business Skills

ORLANDO

RON JENSEN began his IT career as a self-professed "propeller head." But now he is the purchasing manager for IT professional services at construction equipment manufacturing giant Caterpillar Inc.

"I did the bits and bytes," Jensen said at Gartner's outsourcing conference here last week. He wrote assembly code, programmed in other languages and managed technical units at Peoria, Ill.-based Caterpillar.

Then, in his mid-40s, Jensen decided he wanted to take advantage of other opportunities available at the company and earned an MBA.

For those interested in following a similar career path, Jensen's top piece of advice is to learn some business skills.

"That's absolutely most important," the 34-year IT veteran said. "Beyond that, it's communication skills [and] interpersonal skills."

Mack Murrell, senior director of enterprise IT operations and services at The Dow Chemical Co., also moved from a technical background to a high-level management post.

Murrell, who is part of a three-person IT leadership team at Dow, was trained as an electrical engineer. But, he said, "I didn't want to be a senior electrical engineer at a chemical company."

He was moved into IT management more than a decade ago after he suggested a more standardized approach for some of Dow's IT operations. Like Jensen, he also got an MBA degree along the way.

Midland, Mich.-based Dow has outsourced most of its IT operations to IBM, Hewlett-Packard Co. and Accenture Ltd., but it still has a 600-worker IT staff. Employees who are being groomed for IT leadership positions need to understand the company's business requirements and have "a strong sense of vision" as well as the ability to "blossom where [they] are planted," Murrell said. "We direct their path so they get specific experiences."

Pamela Carreon, who manages offshore outsourcing and enterprise vendor services at Wells Fargo & Co. in San Francisco, said she needs to fill three jobs on her staff and wants people who are good communicators, listeners and problem-solvers. Finance and business management experience are also high on Carreon's skills wish list.

Although Carreon manages Wells Fargo's IT outsourcing relationships, she doesn't have a formal IT background herself: Her major in college was Spanish.

– PATRICK THIBODEAU

IT Execs Criticize Storage Pricing Models

They contend that software, services and equipment costs are inflated

BY LUCAS MEARIAN
SAN DIEGO

Several IT officials expressed their disdain for inflated storage costs — whether equipment, management software or maintenance — during a panel discussion at Storage Networking World here last week.

Todd Thomas, CIO of Austin Radiological Association PA, said his biggest concern now is the cost of maintaining storage equipment.

"It would be cheaper for us to go into a new SAN environment than to continue maintenance on existing equipment," he contended. However, Thomas said that replacing the company's storage infrastructure isn't necessary, so he plans to work on better controlling maintenance costs.

Charles Inches, IT director of Corner Banca SA in Lugano, Switzerland, said that resource management is the company's greatest storage cost. "It's managing all this stuff that's becoming a nightmare — cost-wise, organizational-wise, standards-wise," Inches said.

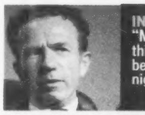
At some point, as the distinction between production and nonproduction data blurs, all corporate users need to be involved in protecting corporate data and thus must have access to storage management tools, he said. "Nowadays, [even] e-mail is becoming production data," Inches noted.

The IT executives also said they aren't fond of capacity-based licensing of storage management software. "It should come bundled with your hardware," Thomas said.

"It's just outrageous," added Oliver Fischer-Samano, IT director at Baerlocher Productions USA LLC in Cincinnati.

Laura Sanders, vice president of systems storage products and solutions at IBM, responded that users have long complained about such pricing issues, even as pricing models have evolved.

Sanders suggested that a key reason for such pricing complaints is that users have "never had a budget for storage management software. So I'm thrilled they are talking about [it], because they're thinking about it as a thing of value."



INCHES: "Managing all this stuff [is] becoming a nightmare."

THOMAS: A new SAN environment would be cheaper than maintenance.

Storage hardware pricing, said Inches, is comparable to a "Turkish carpet bazaar." He said users must wheel and deal with vendors — unless both sides agree to form a long-term relationship.

Fischer-Samano said he can slash the cost of storage hardware in half "just by going back and saying, 'Hey I have a better quote,' even if I didn't have it. They're willing to deal. Where they don't deal is with the service agreement, and that's where they get you."

Jerry Bartlett, CIO at TD Ameritrade Holding Corp. in Omaha, said he advocates that his company be vendor-agnostic but acknowledged that it's almost exclusively an EMC shop. "That's problematic, because it limits your choices [and is an] inhibitor to flexibility. The day you can move to a more heterogeneous environment, then you can introduce true competitiveness" and lower prices, he said.

The panelists were also critical of vendors' efforts to build interoperable storage products. ▸

MORE IN THIS ISSUE

Don Tennant found IT users and vendors alike searching for alternatives at the SNW event. **Page 24**

IBM Downplays Industry Pricing, EMC/Intel Pact

BY LUCAS MEARIAN
SAN DIEGO

IBM officials expressed little concern that the company's storage sales to small and midsize businesses (SMB) will be hurt by Intel Corp.'s agreement to resell EMC Corp. systems, announced at last week's Storage Networking World conference here.

In an interview with Computerworld *at the event,* **Andy Monshaw**, *general manager of system storage at IBM, discussed the EMC move, user complaints about high storage pricing and the state of tape technology.*

How do EMC's expanded manufacturing and distribution partnerships affect IBM's strategy? Number one, they're distributing a product that nobody appears to want, which is a single-controller, low-end storage device. It didn't work with Dell, and now I think they're seeking other partners.

[IBM] had tremendous growth in [the SMB market] last year. We grew roughly three times as fast in SMB as in our large accounts. Sure, we're always looking for the right kinds of partners. We just signed a very interesting alliance with a very, very large industry player in one of the key segments. I don't think I can talk about it yet.

Do you agree with some analysts who say the IBM/Network Appliance relationship has created a sales conflict? In general, the partnership is going extremely well. We got products to market in record time last year. I do not see conflict. To me, it's the uninformed talking to the uninformed.

Are user complaints about the industrywide high cost of storage valid? That's contrary to what we hear. Incumbency leads to gouging. I think that some vendors out there have some hidden costs for device drivers, for maintenance, for any time they have to come in and touch the infrastructure, and hidden costs for replication on every disk array.

Disk prices have been [dropping] between 35% and 40% year to year. That's not that different from what it was before. But, let's be honest, some folks charge you for damn near everything. We do get brought into a lot of accounts where the incumbent is pricing very high and [the user is] stuck.

Since tape is an enormous part of IBM's business, how do you deal with the drop in the amount of tape being used? I don't think it's a fair assertion. First of all, tape, while it is largely used in the archive market, isn't *solely* used in the archive markets. Second, the archive market is a pretty damn big market. It's four times the amount of capacity than the entire worldwide external disk market we shipped. The market is not shifting. Archive is really at the infancy of its explosion. ▸

Intel Agrees to Resell EMC Arrays

SAN DIEGO
EMC CORP. said that Intel Corp. has agreed to resell its low-end storage array through its cadre of value-added resellers.

Intel said the Intel R212PP Storage System, based on EMC's Clariion AX150 and AX150i arrays, is expected to be available from the Intel worldwide partners in May.

The agreement was announced at the Storage Networking World conference here last week.

Harry Hoang, a storage practice manager at Helio Solutions Inc., a value-added reseller (VAR) in Santa Clara, Calif., predicted that the deal will quickly improve EMC's low-end storage business.

Oliver Fischer-Samano, IT director at Baerlocher Productions USA LLC in Cincinnati, said he hasn't bought small storage systems from EMC in the past because its sales representatives soured him on the company.

Though the deal doesn't change his mind about EMC, Fischer-Samano, whose firm makes plastic additives, predicts that it will boost EMC's low-end storage business.

Steve Duplessie, an analyst at Enterprise Strategy Group Inc., said the deal will provide EMC with more opportunities to sell its systems to small and midsize businesses without significantly disrupting its long-standing agreement with Dell Inc. Dell manufactures and resells EMC's midrange and low-end Clariion arrays.

"Intel has 160,000 – for the most part small – VARs with incredible reach around the planet," Duplessie said. "Dell doesn't sell into Asia-Pacific. And Dell doesn't even sell a lot of the AX [models]. So it extends EMC's potential reach, and it's really not competitive."

As part of the reseller agreement, Intel will specifically enhance its processors to meet the increasing requirements of networked storage systems. Intel will also help EMC enhance its storage architectures and identify future market requirements, the companies said in a statement.

– LUCAS MEARIAN

BRIEFS

Microsoft Purchases BI Tool Maker

Microsoft Corp. has agreed to acquire ProClarity Corp., a maker of business analysis and visualization software for culling information from Microsoft SQL Server and exposing it to business users. Terms of the deal were not disclosed. Microsoft plans to use the tools from the privately held company with its SQL Server 2005, Office Business Scorecard Manager 2005, Office Excel and Office SharePoint Portal Server products.

Sun Updates Its Analytics Software

Sun Microsystems Inc. has rolled out an upgraded version of its business analytics software for storage. Version 5.0 of Sun's StorageTek Business Analytics system is based on technology gained last year from the company's $4.1 billion acquisition of Storage Technology Corp. StorageTek had acquired the software in 2004 with its purchase of Storability Software. Version 5.0 adds network-attached storage reporting capabilities and reporting functionality to identify and repair remote storage.

Compuware Agrees To Buy Irish Vendor

Compuware Corp. has agreed to acquire privately held SteelTrace for approximately $20 million in cash. SteelTrace, a Dublin-based maker of business requirements management tools, is a Compuware partner. Its tools are already integrated in Compuware development and quality assurance products, Compuware officials said.

SAP Pledges Support For MySQL Database

SAP AG is developing versions of its ERP software to run on MySQL AB's open-source database. The announcement came weeks after SAP participated in an $18.5 million round of venture capital funding for MySQL. SAP said its applications should run on MySQL by year's end.

[ON THE MARK]

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

YOUR LATTE IS DIRECTLY BEHIND YOU.
COOL.
LOKI
JAVA
BIG BUCKS COFFEE

MATTHEW FAULKNER

Wi-Fi Zeros In On Laptops' . . .

. . . locations throughout much of the U.S. Fleet managers, security managers and the cartographically challenged get a new whereabouts weapon this week, when Skyhook Wireless Inc. in Boston releases a beta version of its Loki mapping service for mobile users.

Skyhook CEO Ted Morgan says that by adding the free Loki tool bar to your Web browser, you can register the location of your laptop in the company's database of 5 million Wi-Fi access points in the U.S. Once you've registered, Loki can give you maps of where you are relative to other access points. Commercial users of Skyhook's Wi-Fi Positioning System software can track trucks equipped with laptops, say, and security managers can use the tool to track down missing machines. Morgan says Skyhook has 100 employees who cruise 15 to 20 miles around major urban areas and pinpoint the locations of Wi-Fi access points. By July, he claims, they will have mapped out Wi-Fi coverage in areas where more than 70% of the U.S. population lives.

MORGAN: Keep track of your laptops.

VoIP technology for Wi-Fi on handhelds . . .

. . . is on the horizon. Jason Fischel, chief technology officer at CounterPath Solutions Inc. in Vancouver, British Columbia, acknowledges that his company is only in the alpha stage. But CounterPath, which sells its iBeam softphone technology for PCs to voice-over-IP providers such as Vonage Holdings Corp. and Deutsche Telekom AG, has begun testing VoIP software for handhelds used over Wi-Fi networks. One of the sticking points, Fischel says, is Wi-Fi's current inability to hand off calls from one access point to another as users roam. But he thinks that problem can be resolved, probably by next year. You don't have to wait for this week's release of iBeam 1.5 for PCs, which includes improved quality-of-service monitoring and policy enforcement. By June, iBeam users will be able to make calls from their Outlook or Notes address books, Fischel says.

18M

Frost & Sullivan's estimate of VoIP "lines" in North America by 2010.

Authenticate yourself via the fingerprint . . .

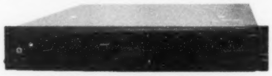
. . . in your pocket. If Colin Hendrick gets his wish, starting in this year's third quarter, large companies will be handing out his SmartMetric biometric cards to employees who store their encrypted fingerprints in the card's in-memory database. If your fingerprint matches the stored one, the card will authorize you to get all the access rights and privileges you deserve for IT systems and corporate facilities. Hendrick, CEO of New York-based SmartMetric Inc., says the credit-card-size device has its own custom CPU, memory, radio frequency transceiver, LEDs and power supply. "The trick was to get the componentry miniaturized," he says. The next trick will be to get people to adopt biometric authentication tools. But Hendrick thinks he has an advantage because there will be no Big Brother database of fingerprints; instead, people will carry around their own biometric data. Pricing has yet to be set for the cards, though Hendrick says SmartMetric will sell biometric readers for less than $10 apiece.

6.8B

Smart cards that will be issued by the end of 2006, says Dataquest.

Next, fingerprint your content so data . . .

. . . doesn't go where it isn't supposed to. "Unstructured data is where most proprietary corporate data is kept," says Sreekanth Ravi, CEO of Code Green Networks Inc. in Sunnyvale, Calif. He points to source code, design documents, and merger and acquisition papers as examples. To help you keep tabs on that information, Code Green sells its $75,000 CI-1100 appliance, which does "deep-content fingerprinting" on information stored in more than 400 document formats, Ravi says. The so-called fingerprints are mathematical representations of the content that the CI-1100 can compare against information in data packets crossing your network. It's up to you to define how you want violations of content distribution policies handled. Currently, the CI-1100 can represent 1TB of content in 5GB of fingerprints, Ravi says. By year's end, he says, expect it to be able to manage 10TB of data in the same fingerprint footprint.



Code Green's CI-1100 appliance fingerprints unstructured data.

Protect app-to-app communications . . .

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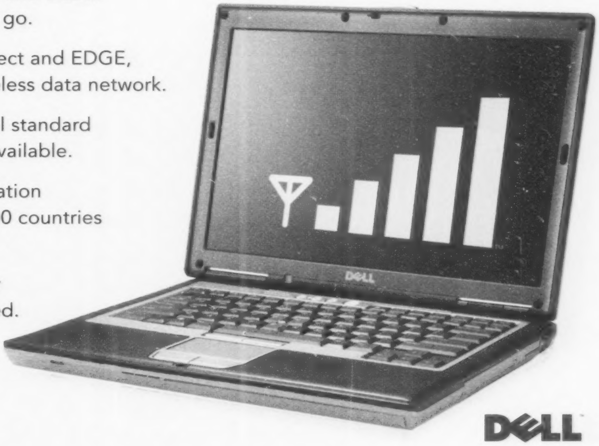

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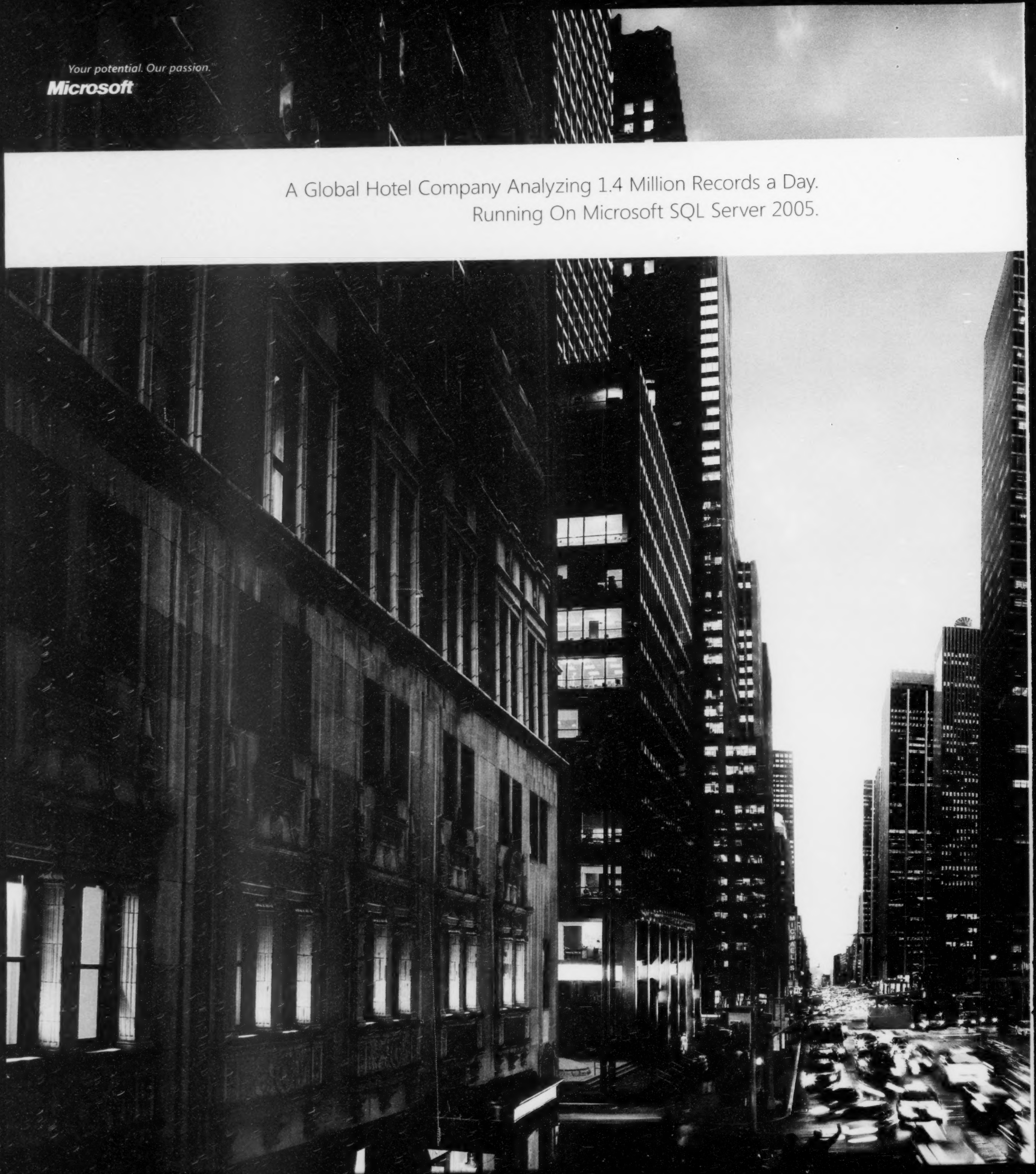

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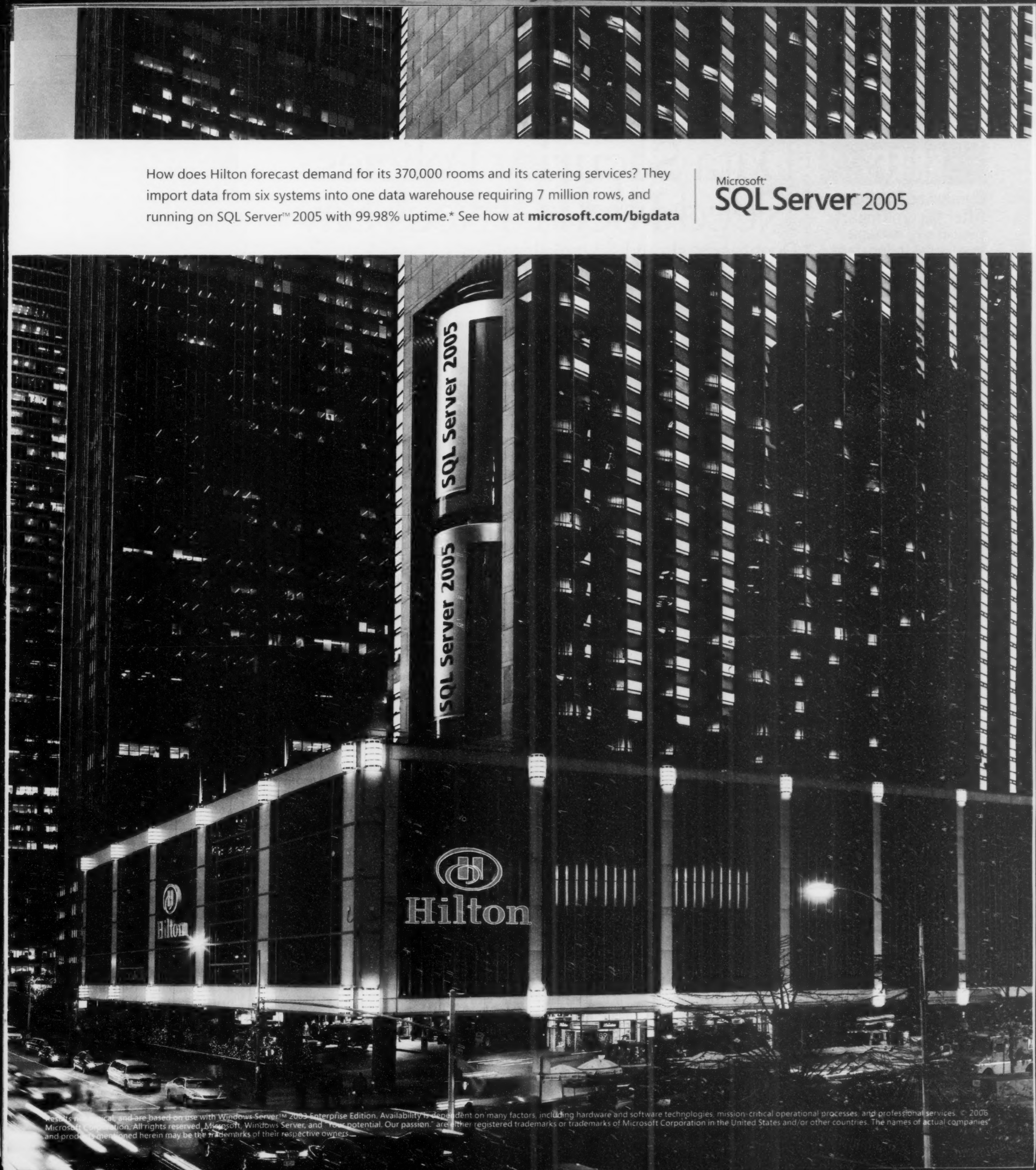

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BRIEFS

Symantec Realigns After Bloom Departs

Symantec Corp. shuffled its executive ranks as part of a corporate reorganization that is now completed, two months after the departure of Vice Chairman and President Gary Bloom. Symantec reduced its business units from six to three and streamlined sales operations. Enrique Salem, Jeremy Burton and Kris Hagerman will head the units. In addition, Ajei Gopal was named chief technology officer, replacing Mark Bregman.

EDS Plans to Expand Chinese Operations

Electronic Data Systems Corp. plans to open at least two outsourcing centers in China and hire 2,000 staffers there over the next two years. The announcement came shortly after EDS moved its Asia-Pacific headquarters from Australia to Shanghai. The company is now looking for locations for the outsourcing centers. The operations will provide IT outsourcing and hosting services for multinational and Chinese clients.

McAfee Buys Web Testing Company

McAfee Inc. has purchased Web-site rating company SiteAdvisor Inc., for an undisclosed sum. SiteAdvisor, which makes software for testing Web sites to see if they contain spyware or viruses, was founded last year by a group of MIT engineers. Last month the company released a free browser tool bar designed to warn users when they visit risky Web sites.

Fiorina Joins Taiwan Chip Maker's Board

Carly Fiorina, former chairwoman and CEO of Hewlett-Packard Co., has joined the board of directors at Taiwan Semiconductor Manufacturing Co. as an independent member. Fiorina will join TSMC's audit and compensation committees. The board now has 10 members, including four independent directors.

Data Security Policies Need Focus, Execs Say

Documents should set high-level goals, avoid long lists of specific mandates

BY JAIKUMAR VIJAYAN
ORLANDO

FOCUS, SIMPLICITY and enforceability are the keys to crafting corporate information security policies, according to IT managers who attended the annual InfoSec World conference here last week.

"Pick your battles," Anish Bhimani, chief information security officer at JPMorgan Chase & Co., advised other attendees during a panel discussion. He added that instead of having a laundry list of compliance items, companies need to be "crystal clear" on what their security objectives are and spell them out in a policy that workers can easily understand and that is high level enough to remain relevant for an extended period of time.

For instance, JPMorgan Chase has set a relatively short list of "must comply with" requirements that encapsulate the New York-based company's high-level data-protection goals, Bhimani said. It has also implemented a broader set of "should comply with" items that are more along the lines of best practices, he added.

"One of the things to consider is, how many controls are you asking people to comply with? Just focus on the things that matter," Bhimani said.

"By definition, policies are mandatory," said Charles Pask, managing director at ITSec Associates Ltd., a consulting firm in Leicester, England. As a result, they should include only items that workers absolutely must comply with, Pask said. Specific security standards and controls should then be implemented as part of an overall risk-assessment program, he added.

Sandy Bacik, corporate security officer at Tekelec, a Morrisville, N.C.-based provider of telecommunications services, said IT security policies should mandate behavior at a high level and need to be kept separate from security standards and guidelines.

> **How many controls are you asking people to comply with? Just focus on the things that matter.**
>
> **ANISH BHIMANI**, CISO, JPMORGAN CHASE & CO.

For instance, a company could have a corporate policy requiring business units to protect their information assets based on the importance of data, Bacik said. A related guideline could inform business managers about the need for strong access controls, while a standard could specify the use of a particular password approach, she said.

Bhimani recommended that companies make their security policies technology-agnostic as well. "You can't mandate the use of a specific technology in a policy," he said, adding that by doing so, you lose the flexibility needed to quickly adapt to both technology and business changes.

Information security policies "written by IT managers for IT managers" seldom work, said Tom Walsh, an independent consultant in Overland Park, Kan. It's better to craft one set of policy objectives for business users and another for the IT staff, Walsh said.

The latter should cover issues that pertain specifically to IT workers, such as data backup, configuration management and change-control procedures, he said.

Policy Advice

- Create an overall security policy for all workers, plus a separate one for IT staffers.
- Make your policy documents readily available to employees.
- Set policies that can easily be enforced.
- Develop formal processes for dealing with exceptions to your policies.

SOURCE: TOM WALSH CONSULTING LLC

Security policies also need to be easily enforceable to be effective, said Philip Maier, vice president of the information security, emerging technology and network group at Inovant Inc., Visa International Inc.'s IT unit. Therefore, it's a good idea to vet all policies with the people who will be responsible for enforcing them, as well as with internal technology experts, Maier said.

For multinational companies, writing security policies that retain the same meaning when translated into different languages can be a challenge, Pask said.

Similarly, terms that are acceptable in the U.S can create problems elsewhere. Maier noted that Inovant had to replace references to "master" and "slave" systems after employees in Asia found those words to be objectionable. ▸

Microsoft Broadens Windows Support for Mobile DB

BY ERIC LAI
SAN FRANCISCO

Microsoft Corp. last week said that it plans this year to extend the mobile version of its SQL Server database to run on all versions of Windows.

SQL Server 2005 Mobile Edition, which now works on handheld devices that use Windows CE and Windows XP Tablet PC Edition, will eventually support Microsoft's full line of operating systems, including the upcoming Windows Vista client operating system. The mobile database will be renamed SQL Server Everywhere Edition.

A Community Technology Preview release of SQL Server Everywhere should be ready this summer as a 2MB download, with a commercial release due by year's end, said Paul Flessner, senior vice president of data and storage platforms at Microsoft, in a presentation to SQL Server users in San Francisco.

SQL Server Everywhere will be available to users under a free license. Flessner said the software should help CIOs get a better handle on what he called an "explosion" of data outside of corporate data centers, enabled by smarter hardware and less-expensive memory and storage.

"A lot of companies are consolidating more into their data center, but it's very naive to think all data will live there, especially when handheld devices in five years will be as powerful as your PC," he said.

Russell Wong, senior director of IT services at Paradigm Management Services LLC, said Flessner's handheld vision jibes with his own.

Paradigm, a Concord, Calif.-based medical care provider, employs nurses to check on patients in their homes. Currently, the nurses lack handheld devices and must return to the company's central office to enter patient information into its SQL Server 2000 database, Wong said.

But he added that mobile devices equipped with SQL Server Everywhere could help Paradigm to provide real-time data input and access capabilities to its nurses. ▸

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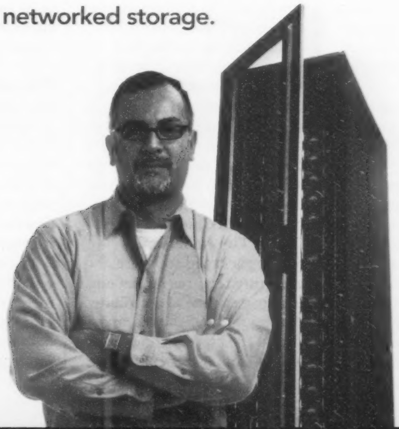

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GLOBAL DISPATCHES An International IT News Digest

Chinese IT Policies Raise U.S. Concerns

BEIJING

TECHNOLOGY POLICIES that limit foreign companies' access to China raise doubts about the Chinese government's commitment to World Trade Organization guidelines, according to a global report on trade barriers issued by the Office of the U.S. Trade Representative.

The report, issued last week, covered more than 60 foreign markets. It criticized China for pursuing "unique national standards that could lead to the extraction of technology or intellectual property from foreign rights holders" and for draft regulations mandating purchases of software produced in China.

In addition, the USTR's report took the Chinese government to task for interfering in "commercial negotiations over royalty payments to intellectual property rights holders in the area of 3G standards" for advanced wireless networks.

The report did note, though, that China has made some progress in revamping its laws to strengthen intellectual property protection.

Efforts to contact Chinese officials for comments about the report were unsuccessful.

■ SUMNER LEMON, IDG NEWS SERVICE

GLOBAL FACT

851,735

The total number of PCs sold in Pakistan, Bangladesh and Sri Lanka in 2005.

SOURCE: IDC, FRAMINGHAM, MASS.

HP Spends Big on IT Equipment in Taiwan

TAIPEI

HEWLETT-PACKARD CO. last year spent $18 billion (U.S.) in Taiwan to procure IT components and systems, the head of the company's Taiwan operations said late last month.

HP outsources production of handheld devices and desktop and laptop PCs to companies in Taiwan, said Rosemary Ho, managing director of HP Taiwan, during groundbreaking ceremonies for four chip plants that Powerchip Semiconductor Corp. is building in Taichung, Taiwan.

HP accounted for 39% of the $45.72 billion worth of electronics products that Taiwan-based companies exported last year, according to a report by the Taiwanese government. In comparison, Dell Inc. sourced about $5 billion worth of IT gear from companies in Taiwan last year, according to the report.

■ DAN NYSTEDT, IDG NEWS SERVICE

Korean FTC Probes Qualcomm, Partners

SEOUL

SOUTH KOREA'S Fair Trade Commission is examining the business dealings between Qualcomm Inc. and three handset makers in that country, the San Diego-based chip maker disclosed last week.

Qualcomm said that officials from the commission visited the offices of its South Korean subsidiary last Tuesday, as well as those of phone makers Samsung Electronics Co., LG Electronics Inc. and Pantech & Curitel Communications Inc.

The U.S. company described the questioning as an inquiry, not an official investigation, and added that the South Korean commission didn't explain the reason for its visits. In a statement, Qualcomm President Steve Altman said the company's business practices "are lawful and pro-competitive." ▸

■ JAMES NICCOLAI, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

Dimension Data PLC has won a three-year contract worth $40 million Australian ($29 million U.S.) from the South Australia state government. Johannesburg, South Africa-based Dimension Data will provide monitoring, administration, support and repair services for South Australia's network and firewall infrastructure.

■ COMPUTERWORLD TODAY (AUSTRALIA) STAFF

Sanyo Electric Co. plans to apply for Japanese government help to rebuild its semiconductor unit's facilities in Niigata, which was badly damaged by an earthquake in 2004. Sanyo, which is in the midst of a restructuring, will also turn the chip unit into a subsidiary, tentatively named Sanyo Semiconductor Co.

■ MARTYN WILLIAMS, IDG NEWS SERVICE

SAP AG has agreed to acquire Virsa Systems Inc., a maker of enterprise risk management software in Fremont, Calif., for an undisclosed price. SAP said Virsa's tools are designed to help users ensure continuous compliance with regulations.

■ CHINA MARTENS, IDG NEWS SERVICE

Hosted BI Promises to Boost Access to Data

Emerging services expected to cut costs, add security

BY HEATHER HAVENSTEIN

Some companies are eyeing emerging on-demand business intelligence offerings to boost access to data without having to make additional infrastructure investments.

Such interest is prompting Business Objects SA, SAS Institute Inc. and some smaller vendors to bump up their hosted BI offerings in areas like reporting and analytics.

Paris-based Business Objects this week will roll out CrystalReports.com, an on-demand version of its popular Crystal Reports software. The new service will offer external users access to Crystal Reports documents via the Web. It can also notify users when new or updated reports are available.

A basic version, available this week, supports up to 10 external users. A premium edition, which will be available by June, will offer unlimited storage for unlimited users.

AbeTech Inc., a Maple Grove, Minn.-based bar code and labeling company, uses Crystal Reports to provide status reports to about 15 key clients. The company expects that the new premium service will let it provide reports first to 64 and eventually to 200 clients, said Chief Operating Officer Tim Anderson.

The packaged software currently requires half of one employee's time to distribute reports to the 15 clients, and "one of the biggest complaints we get from our clients is not getting status updates as often as they would like," he said.

Anderson, who plans to begin using a beta version of the service as soon as it becomes available, expects it to be able to provide hourly status reports to clients without requiring more work from AbeTech employees.

Process Changes

C.J. Land, e-marketing director at Applied Voice and Speech Technologies Inc. in Foothill Ranch, Calif., said last week that he plans to begin using a beta version of the Business Objects premium service within days.

The company currently e-mails Crystal Reports documents to external partners and other users, trusting that the data will remain secure. The on-demand service offers password protection that will ensure that only authorized users can view the reports, he said.

"The ability to now send those reports up to some common workspace and have others access that is extremely powerful," Land said. "It will redefine the way people use Crystal Reports."

CrystalReports.com

A hosted premium version of Crystal Reports

FEATURES: Allows report authors to create or refresh Crystal Reports documents shared with users, upload those to CrystalReports.com and create a list of authorized users who can view the information. Also, users can drill down for further information within the report.

PROMPTED BY: The popularity of an initiative launched in January to offer Crystal Reports for Salesforce.com users.

AVAILABLE: Later this quarter.

PRICE: $20 per user per month.

Business Objects is the first enterprise BI vendor to begin offering query and reporting on demand, said Dan Vesset, an analyst at IDC. Although Business Objects is initially targeting the midmarket, it "will likely get uptake from larger enterprises who may have prior experience with other hosted solutions," he said.

SAS, meanwhile, plans to enhance its on-demand marketing automation package and may offer its marketing optimization and risk optimization analytic software as an on-demand service, said Richard Roach, director of SAS Solutions OnDemand.

The company is also looking to come out with specialized vertical services, including analytics for banks, he added.

Roach declined to provide more details on plans for the new services. ▸

Users Test Expanded IBM SOA Offerings

Hope new tools, services can improve development, business processes

BY HEATHER HAVENSTEIN

It's wasn't so much the maturation of technology that prompted Jim Haney, CIO at Harley-Davidson Inc., to implement a service-oriented architecture (SOA). It was the realization that "I don't have a lot of other tricks to pull out of my IT toolbox," he explained.

Haney opted to "decouple" various IT systems at the Milwaukee-based motorcycle manufacturer and move toward implementing an SOA after deciding that Harley-Davidson developers can't continue to build software the same way it has been built for the past 20 years, he said.

"Projects have to show returns much quicker," he said. "You need to be a lot more flexible."

Haney spoke during a teleconference that IBM held last week to unveil a slew of new SOA products, upgrades and services.

Seamless Changes

Harley-Davidson is testing IBM WebSphere middleware tools for use in an SOA initiative. The company's goal is to use Web services to build business processes that can be quickly changed to match shifting needs, Haney said.

When Harley-Davidson's SOA is fully implemented, Haney said, he expects the company's IT department to be able to change a business process — such as revamping advertising in the spring, when people are more likely to buy — without having to change underlying IT systems.

"By decoupling all those applications, we can bring these [processes] to the forefront as services. We can change one, [and] do it quickly," he said.

During the teleconference, IBM touted 11 new products and 20 upgrades that officials said can help users overcome barriers of entry to building an SOA. Some of the products are shipping now, and all of them will be available within six months, IBM said.

Bob Berckman, assistant vice president at The Pep Boys, said the Philadelphia-based auto parts and repair company has been working with IBM for two years to replace legacy business applications at its 593 stores with an SOA built using WebSphere Application Server and the WebSphere broker for enterprise messaging.

The company has replaced some individual pieces of its infrastructure — such as a point-of-sale application — while keeping other legacy business applications running smoothly by using a Web services-based integration layer, Berckman said. The Pep Boys is now installing new inventory software without affecting the point-of-sale application, he added. ▸

IBM SOA Updates

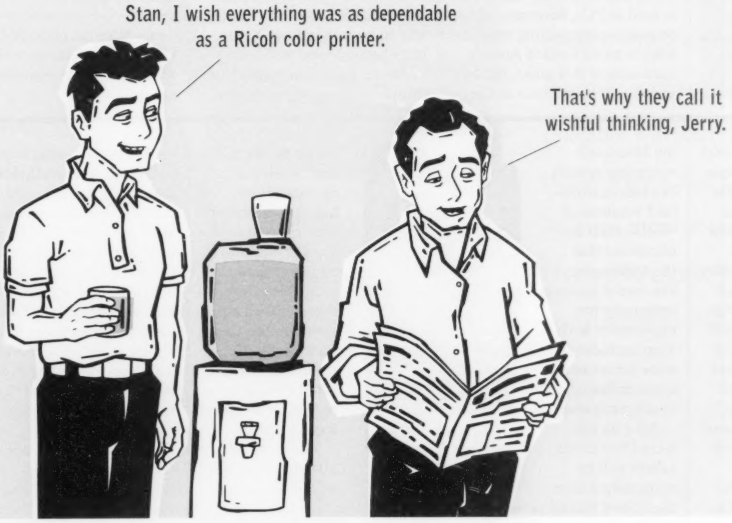
WebSphere Portal 6.0: Integrates IBM Workplace and collaborative technologies for building composite applications.

WebSphere Business Monitor 6.0: Adds business alerts and reports that combine real-time performance data with historical analysis and scorecards.

WebSphere Application Server 6.1: Adds the ability to reduce the complexity of an SOA as it adds voice, video and instant messaging applications.

WebSphere Commerce 6.0: Provides a consistent view of customers across all sales channels.

SOURCE: IBM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Continued from page 1

Macs

tle fanfare, enables Windows XP to run on the new Macs just as it does on desktop and laptop PCs.

Boot Camp creates a hard-drive partition for Windows XP and lets users choose between it and Apple's Mac OS X operating system each time they start their computers. The dual-booting capability "definitely makes the Mac more attractive," said Micah Lamb, a microcomputer support specialist in the IT services department at Baylor University in Waco, Texas.

Lamb said via e-mail that Baylor often has end users who prefer Apple's hardware to PCs but need Windows in order to run applications central to their jobs. Boot Camp will let them have it both ways, he noted.

In addition, the new software essentially makes the Mac two computers in one, Lamb said. "You can buy a traditional Wintel box and run Windows only, or you can buy a new Mactel box and run both Windows and Mac OS X."

John Halamka, CIO at Harvard Medical School and CareGroup Healthcare System in Boston, said the school has about 4,000 Macs and a roughly equal number of Windows-based machines.

Now students and faculty members can choose "the best tools for their specific needs," Halamka said. Users who have tried the beta release of Boot Camp have reported that it makes Windows XP applications run "blazingly fast" on a Mac, he said.

SOFTWARE FAQ

Boot Camp

WHAT IS IT? Beta software that lets Apple's newest Intel-based desktops and laptops run Windows XP natively. The beta is an 83MB file that can be downloaded at *www.apple.com/macosx/bootcamp.*

WHAT SYSTEMS CAN RUN THE SOFTWARE? The Mac mini, the 15-in. MacBook Pro laptop and both versions of the all-in-one iMac desktop machine.

WHAT ELSE DO USERS NEED? Mac OS X 10.4.6 or later, the latest firmware update for their Macs, at least 10GB of free space on their start-up disks and Windows XP Service Pack 2.

Not everyone is sold on Boot Camp, though.

"It's not as neat and clean as it might sound," said Roger Kay, an analyst at Endpoint Technologies Associates Inc. in Wayland, Mass. "They've filled a hole here, but it's more of an experimental thing. I don't think it'll change the game that much."

Depending on how users format Windows XP on their Macs, they may or may not be able to read and write data between the Windows and Mac OS X partitions, Kay said. And businesses still have to buy a Windows XP license from Microsoft for each system that Boot Camp runs on, he noted.

A Work in Progress

"The proof of the pudding will be to see how good it really is — how stable and supportable, and how scalable," said Alastair Behenna, CIO at Harvey Nash PLC, a London-based workforce recruiting and IT services firm.

Harvey Nash runs Macs as well as PCs. Behenna said he sees no compelling reasons to move toward Apple's hardware at this point, but he added that he will watch the development of Boot Camp.

> **The proof of the pudding will be to see how good it really is – how stable and supportable, and how scalable.**
>
> **ALASTAIR BEHENNA,** CIO, HARVEY NASH PLC

Apple itself said that some Mac features won't work with Windows XP because of hardware incompatibilities. That includes its USB modem, wireless keyboard, wireless mouse and remote control device.

Boot Camp is available now as a free download that works for only a limited time. Apple said the software will be included in the next major release of the Macintosh operating system, Mac OS X 10.5, which is code-named Leopard and is expected to be ready late this year.

Within the past few weeks, some hackers created a kludgy way to boot Windows XP on Intel-based Macs. According to Apple, Boot Camp simplifies things by providing a graphical application that walks users step-by-step through the process of creating the required partition, burning a CD with all the necessary Windows drivers and installing the operating system from a Microsoft CD.

Apple has no plans to offer Windows XP itself, said Brian Croll, senior director of Mac OS X product marketing. "We want to make it clear that Apple is not going to preinstall or sell Windows," Croll said. "This party is BYOW."

In a statement, Microsoft said it is "pleased that Apple customers are excited about running [Windows], and that Apple is responding to meet the demand."

Ted Schadler, an analyst at Forrester Research Inc., said the decision to offer Boot Camp was really a no-brainer for Apple executives. "Apple is a hardware company — they build software to sell the hardware," he said. "The question really is, Why *not* support the installation of Windows on their computers?" ▸

James Niccolai of the IDG News Service and freelance writer Yuval Kossovsky contributed to this story.

Continued from page 1

Census

by High Tech Computer Corp., a hardware vendor in Taiwan, said Bruce Buckley, director of census-related business development at Harris.

The devices, which are still under development, will be based on consumer-grade handheld technology that has been customized and made semirugged, Buckley said. For example, the handhelds are designed to have a 10-hour battery life so census staffers can work all day, he said.

The devices will also include a cellular data radio for sending encrypted information to Census Bureau offices over a dedicated Sprint Nextel Corp. network. A traditional phone-line connection port will be custom-installed for backup purposes, Buckley said.

Wagner said Census Bureau officials didn't specify the use of Windows Mobile 5.0. The bureau's request for proposals listed general functional requirements, including usability and reliability levels, instead of setting any technology mandates. "It didn't matter to us if it was Windows Mobile 5.0 or something else," Wagner said. "It was up to [the vendors] to figure out the right solution."

The team led by Harris was chosen after a demonstration of handheld prototypes by all the bidders in January, he added. The prototypes had to include mapping support, an application for updating the addresses of residents, and a time-and-expense form for use by census workers.

Buckley said Harris chose Windows Mobile 5.0 for the handhelds primarily because the Microsoft operating system can run customized versions of off-the-shelf applications that the Melbourne, Fla.-based systems integrator has experience with. That includes software for security and wireless data synchronization.

Census takers will use a handheld device similar to this one to speed the processing of data.

All data collected by census takers will be transmitted over the Sprint Nextel network immediately or at set intervals, according to Buckley. If workers fail to send data as scheduled, the handhelds will do so on their own, he said. In addition, the Census Bureau will be able to send information to workers, such as advisories notifying them that residents on their routes have already filed paper-based census surveys and can be skipped.

Buckley said there will be no keyboard on the handhelds; instead, data will be input primarily by tapping a stylus on a color screen.

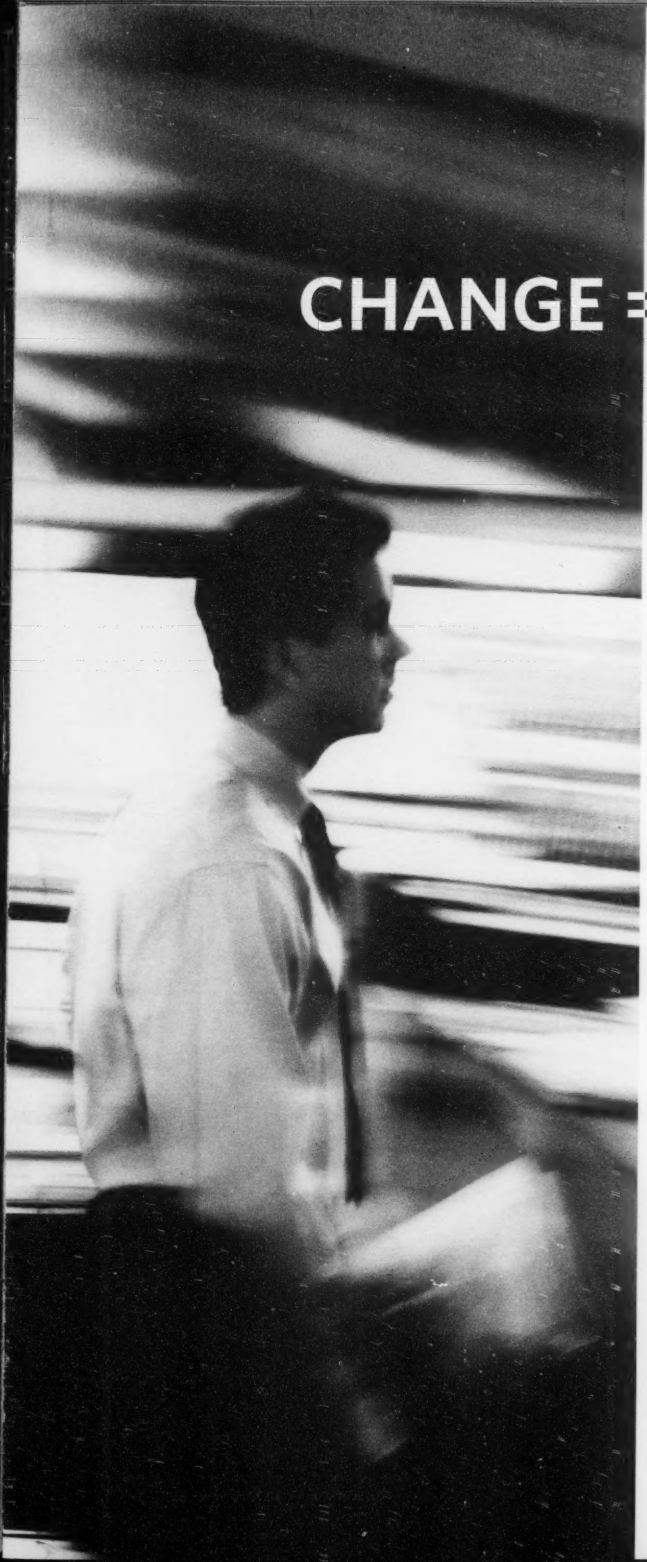
The handhelds also aren't expected to have voice capabilities, a decision made to comply with government security requirements and keep costs low, he said.

However, Wagner said voice support might be added if its use could be controlled. "We haven't dismissed it entirely," he said, noting that perhaps census takers could be allowed to talk via the handhelds to their crew leaders only.

The contract with Harris also covers the IT infrastructure, hardware and software needed to support the handhelds at about 455 local Census Bureau offices. Dell Inc. will supply PCs and servers, and Oracle Corp. will provide software for integrating data from the handhelds with information in back-end systems.

Other vendors involved in the project include Accenture Ltd., Unisys Corp. and Headstrong Corp., an IT consulting and systems engineering firm in Fairfax, Va.

Craig Mathias, an analyst at Farpoint Group in Ashland, Mass., said he isn't aware of any deployments of wireless handhelds that are larger than the one planned by the Census Bureau. ▸



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_INFRASTRUCTURE LOG

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_DAY 36: The black hole just sucked in three interns. HR is not pleased.

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Microsoft Picking Up CRM Customers From Its Rivals

Says Version 3.0 corrects earlier flaws, integrates better with Office, ERP apps

BY MARC L. SONGINI
DALLAS

ALTHOUGH a latecomer to the CRM business, Microsoft Corp. has quietly been luring customers away from more established rivals such as Siebel, now part of Oracle Corp.

Several users at Microsoft's Convergence 2006 conference here late last month said they turned to Microsoft Dynamics CRM because of its integration with other Microsoft applications, including Dynamics ERP and Office.

In addition, a half-dozen users said Version 3.0, released last fall, corrects many of the performance, data synchronization and other problems in Versions 1 and 1.2 of the Microsoft CRM software.

Global Comfort Systems plans to replace its Siebel call center application with the latest Microsoft CRM version because it's integrated with the other applications and costs less, said Andrew Fralick, IT director at Global Comfort unit Webasto Product North America Inc.

Stockdorf, Germany-based Global Comfort expects the cost of installing Microsoft CRM to be about the same as it would be to upgrade its Siebel software, Fralick said.

His unit in Fenton, Mich., has been using the Microsoft CRM software for about two years through multiple versions; he called the newly installed Version 3.0 an enterprise-class product.

Fralick said Webasto's sales force did suffer through the defects of earlier versions of the Microsoft CRM software. "The [initial] product wasn't a flop," he said. "It just didn't work as billed. Now they have an excellent new version that's finally there."

'Worth It in the End'

The integration with Microsoft applications prompted Wilson Language Training Corp. in Oxford, Mass., to replace its Siebel 6.0 CRM software with Microsoft CRM 1.2 in January 2005, said Brian Kretchman, technical development manager at the provider of teacher training resources.

Despite the cost of the licensing, end-user retraining and the data cleansing associated with replacing Siebel, it was "worth it in the end," said Kretchman, a panelist at the Convergence conference.

Kretchman said customization of the Siebel software by sales personnel led to IT support problems. The more rigid Microsoft CRM process improved the efficiency of the software's 60 users, he said.

Wilson intends to upgrade to Microsoft CRM 3.0, most likely this fall, Kretchman said.

Helene Cole, CEO of Altara, an integrator in Basking Ridge, N.J., said her company replaced its Siebel software with the Microsoft offering in 2002. Cole said the Siebel implementation worked well for large customers of its integration services but proved too complex and costly for internal use.

The Quiznos Master LLC, which sells sandwich-shop franchises, replaced a homegrown CRM application with Microsoft's CRM 1.2 offering in February 2005, said Kristie Reid, IT project manager for the company's Quiznos Subs unit. Quiznos now has 550 users of Microsoft's CRM software and will upgrade to Version 3.0 in the next couple of months, she said.

Reid said Denver-based Quiznos uses Dynamics CRM for consolidated reporting. The former CRM system required several different applications to create reports, she added.

> **[Earlier Microsoft CRM versions] just didn't work as billed. Now they have an excellent new version that's finally there.**
>
> **ANDREW FRALICK,**
> IT DIRECTOR, WEBASTO PRODUCT NORTH AMERICA

"I'm not surprised to see [small and midsize] companies switching away from Siebel," said Josh Greenbaum, an analyst at Enterprise Applications Consulting in Berkeley, Calif. "The cost and burden of a big CRM product like Siebel doesn't really make that much sense in [that] market." ◗

Microsoft Steps Into Hosted CRM Business

DALLAS

MICROSOFT took a step into the hosted CRM market at Convergence 2006 here, announcing the Microsoft Dynamics CRM Professional Edition for Service Providers.

The new release targets value-added resellers and business partners that would use it to deliver a hosted offering to end users, who could access the software via a Web browser or an Outlook client.

Since February, IT consultancy CBH Inc. in Irvine, Calif., has been a hosted CRM customer of Microsoft partner Streamline Solutions in Newport Beach, Calif.

Migrating to a hosted version of Dynamics CRM 3.0 for sales force automation last month was a "no-brainer," said Myron Weber, CBH's chief technology officer. The application was deployed quickly, with reduced upfront costs and the requisite service levels, he said.

Prior to the shift, CBH used GoldMine, now a part of FrontRange Solutions Inc. "The biggest factor [for the switch] was that 3.0 integrates into our other applications," which include Microsoft's Solomon (now SL) ERP suite and SharePoint portal, Weber said. He said the GoldMine software was essentially a client/server application that had only a Web front end. The new version of Dynamics CRM has been created specifically for the Internet.

The Microsoft Dynamics CRM Professional Edition application for service providers is shipping now.

– MARC L. SONGINI

Cisco Dials Into Call Analysis

Offers third-party tool to call centers

BY MATT HAMBLEN

Cisco Systems Inc. is moving to tap into an emerging market for speech analysis software that call center supervisors can use to track conversations with disgruntled customers.

Last month, as part of a wider announcement of unified communications tools, Cisco unveiled Unified Customer Interaction Analyzer, a managed service that is built around eLoyalty Corp.'s Behavioral Analytics (BA) software.

The software developed by Lake Forest, Ill.-based eLoyalty can graphically scan calls to detect problems. For example, it can tell if a customer became angry with a call center agent before being transferred to a supervisor or was put on hold for an unacceptable length of time, Cisco executives said at VoiceCon Spring 2006 in Orlando.

Trouble spots in a call are shown on a PC screen as red dots plotted on a horizontal line. Users can click on a dot to get a brief description of what happened or even listen to that portion of the call.

Uniprise, a Hartford, Conn.-based division of UnitedHealth Group Inc. that manages health care benefits for large companies, is an eLoyalty customer that has been using BA since December.

About 300 call center agents have the software now, and it will be rolled out to all 3,000 of the unit's U.S.-based agents this year, said John Reinke, senior vice president of the Uniprise Innovation Lab in Minnetonka, Minn.

Uniprise has spent "multiple millions of dollars" on the project but expects a payback within 10 months, Reinke said. Its broader goals are to use the software to improve employee retention and keep health care insurance customers happier, he added. "We're seeing if we move the needle on customer distress, and we're assuming that in turn will improve the customer experience."

But success requires more than just the use of software like BA, Reinke cautioned. "You can deploy it, [but] if you don't adopt different behaviors in the call center, you won't get any advantage," he said.

Chris Beck, an enterprise voice architect at Career Education Corp. in Hoffman Estates, Ill., saw a demonstration of Cisco's Interaction Analyzer at VoiceCon and said he considered it to be the "most intellectually exciting" product at the show. However, he added that his company has only 25 call center agents and probably wouldn't consider Cisco's offering at this point.

Future versions of BA-type tools may be able to automatically advise agents on how to handle individual callers, said Gartner Inc. analyst Matthew Goldman. Rivals to eLoyalty include CallMiner Inc., Nice Systems Ltd., Utopy Inc. and Verint Systems Inc., Goldman and other analysts said. ◗

Novell Struggles to Maintain Utah Base

BY ERIC LAI

Jim Pulliam remembers his disbelief when he first arrived in Utah to take over as CIO at Salt Lake Community College two years ago. "I couldn't believe how many organizations [in Utah] were still on Novell [NetWare LAN software]. It just shocked me."

Pulliam said Salt Lake Community College was one of the few institutions of higher learning in Utah's tight-knit education community that for the most part ran software from Microsoft Corp. rather than Novell Inc.'s products. The school uses Windows Server, Active Directory, Outlook and Exchange.

But outside of the education market, Utah IT operations are beginning to abandon Novell. Indeed, several IT managers said that they have recently migrated from Novell software to Microsoft offerings or are considering such a move.

Novell had few answers for users moving to Microsoft until it released Open Enterprise Server, the Linux-based successor to NetWare, last year. In addition, during its annual BrainShare user conference in Salt Lake City last month, Novell said it plans to bundle its disparate products into a SUSE Linux-based suite.

Some say such moves may be too little, too late for Novell, since it's losing customers even in Utah, where the company was founded in 1983 by four Brigham Young University classmates in Provo, where it was based until 2004.

Over the past couple of years, Novell has shifted away from its Utah roots, moving its core development team to Nuremberg, Germany, following the 2003 acquisition of SUSE Linux AG. The company relocated its headquarters to Waltham, Mass., a year later.

Utah's largest hospital operator, Intermountain Health Care Inc., replaced Novell's GroupWise collaboration software with Microsoft Exchange in 2004, citing problems with reliability and incomplete features. The move cut first-year operational costs by 35%, said Kyle Andersen, director of enterprise systems.

Nu Skin Enterprises Inc. in Provo finished porting its e-mail and file and authentication servers to Microsoft from Novell last year, said Reed Wilson, global infrastructure architect. "There were just a few people who whined," he said. "But good heavens, our CIO at the time came from Novell, and he didn't think it was such a bad decision."

> "There were just a few people who whined. But good heavens, our CIO at the time came from Novell, and he didn't think [switching to Microsoft] was such a bad decision.
>
> **REED WILSON**, GLOBAL INFRASTRUCTURE ARCHITECT, NU SKIN ENTERPRISES INC.

To be sure, the Novell base still includes several large Utah organizations, such as the state government, Brigham Young University, America First Credit Union and Overstock.com Inc.

Novell officials downplayed the significance of its lost Utah customers. "People have been migrating off NetWare for years. This is an old, old discussion," said a Novell spokesman. He said the new offerings are likely halting the slide.

Gordon Haff, an analyst at Nashua, N.H.-based Illuminata Inc., said that Novell is starting to do the little things — such as increasing the number of applications certified to run on SUSE Linux to several thousand — that make upgrading to its Linux offerings attractive to NetWare users. ◆

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FDA Revamping IT Development Process

BY HEATHER HAVENSTEIN

The U.S. Food and Drug Administration has launched a project to overhaul its application development process to provide management with a view into the agency's IT projects.

The 12-month project, which began in February, aims to help FDA managers better monitor the quality and productivity of contract and in-house teams in eight decentralized development centers.

Ray Russo, director of the Office of Business Enterprise Solutions in the FDA CIO's office, said the effort should inject standard processes into agency application development projects and ensure that IT managers can monitor their returns on investment.

As part of the project, the agency has already started rolling out a new IT governance tool, Cast Software Inc.'s Cast Application Intelligence Platform, which provides a comprehensive view of source code.

"When you have a lot of things outsourced to a lot of contractors, it can be difficult to get the kind of view of what is going on in that code [that] you would like," Russo said.

Product Features

Russo said the tool from New York-based Cast can provide information about the complexity of code and about the cost of projects. It can also help determine whether costs are likely to grow or shrink over time, he added.

The software will be used first to monitor a registry and listing system, where users register food and drug facilities that the FDA regulates.

Over the next six months, the FDA project will extend use of the Cast tool to monitor the development projects at its Office of Regulatory Affairs and its Center for Drug Evaluation and Research.

According to Russo, the Cast software should be monitoring all FDA applications by February 2007.

As part of the project, the FDA also is evaluating other governance tools that will be used to ensure that development efforts aren't duplicated, a task that the Cast product can't do, Russo said.

Melinda Ballou, an analyst at IDC in Framingham, Mass., said the FDA is tackling one of the biggest IT challenges that large organizations now face — getting consistent and accurate metrics about project successes or failures.

One of the barriers to injecting governance into application-development projects, she said, is a reluctance by users to change life-cycle software, such as tools for managing requirements or source code. ▶

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SEC Must Shore Up IT Security, Says GAO

BY LINDA ROSENCRANCE

The U.S. Securities and Exchange Commission must bolster its information security to protect corporate financial data and other sensitive information stored in its IT systems, according to a report released late last month by the Government Accountability Office.

The report found that the SEC has corrected or mitigated only eight of 51 weaknesses cited by the GAO in a report last year, a response the oversight office of the U.S. Congress called inadequate. The report identified 15 new vulnerabilities in addition to those on last year's list.

Corrective actions taken by the SEC over the past year include replacing a vulnerable, publicly accessible workstation, and developing and implementing change-control procedures for an undisclosed major application.

The report found that the financial regulatory agency has not yet effectively controlled remote access to its servers, established adequate controls over passwords, or managed access to its systems and data. In addition, the SEC has yet to securely configure network devices and servers or implement auditing and monitoring mechanisms to detect and track security incidents.

Weak Controls

Most of the newly discovered weaknesses are related to electronic-access controls such as user accounts and passwords, access rights and permissions, and network devices and services, the GAO said.

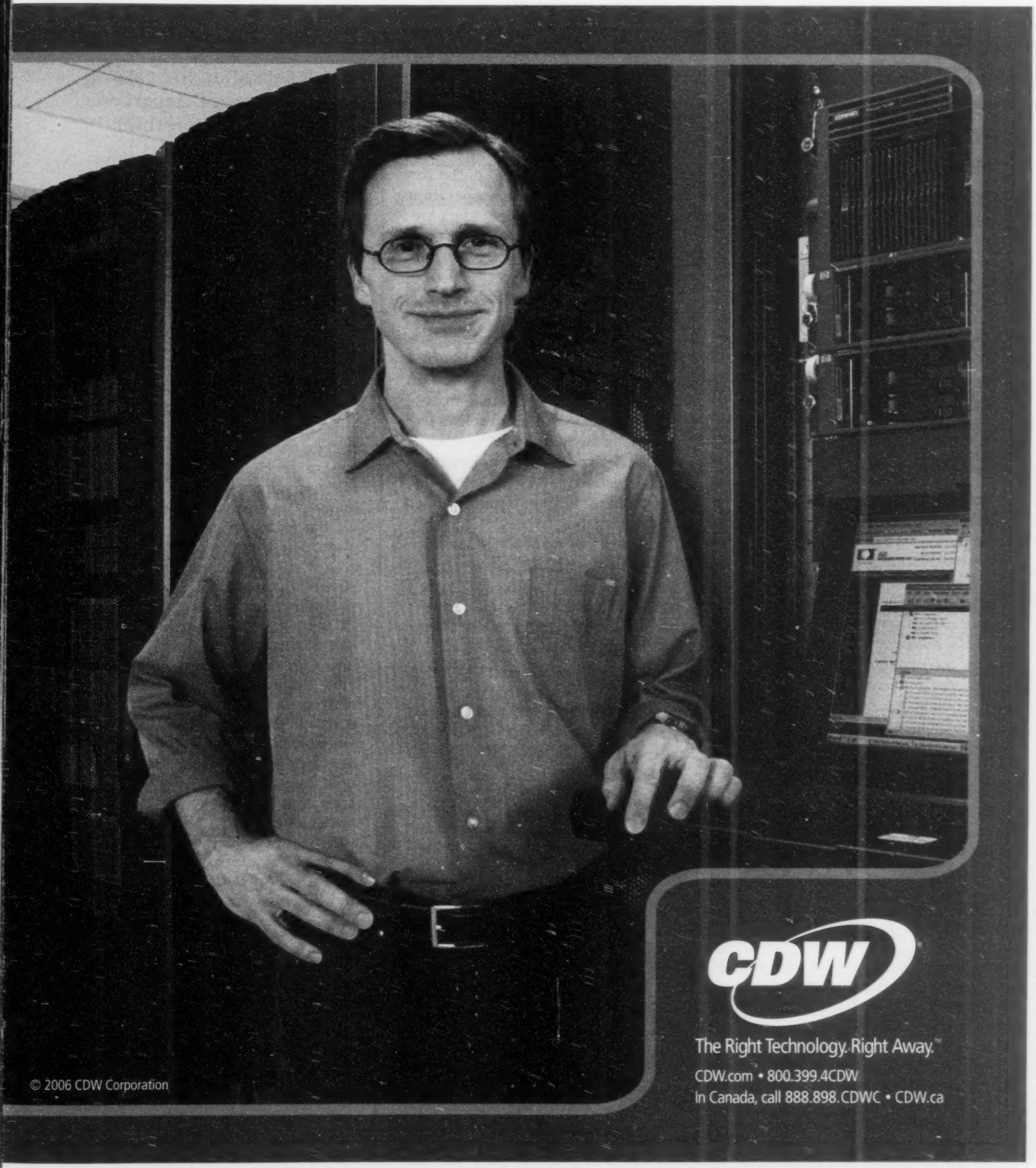
For example, the GAO said the SEC has not adequately controlled user accounts and passwords to ensure that only authorized individuals can access its systems and data.

In addition, the GAO found that the SEC permits users to modify sensitive information or critical system files and directories without required permissions, increasing the risk that the SEC's applications and sensitive financial data could be compromised.

The report determined that the vulnerabilities continue to leave sensitive SEC financial information without sufficient protection against disclosure, modification or loss.

Until the SEC fully develops, implements and documents key elements of an information security program to ensure that effective controls are in place and are maintained, its information systems will remain at risk and be vulnerable to disruption, the GAO said.

In a written response, the SEC said it agrees with the agency's findings and is focusing on implementing its recommendations. ◆



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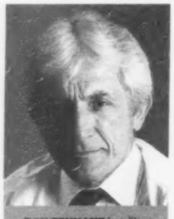
DON TENNANT

Alternative Lifestyle

IF THE RUMBLINGS of the attendees at last week's Storage Networking World conference are any indication, the IT community — users and vendors alike — is so desperate for alternatives that exploring them has become something of a professional lifestyle.



DON TENNANT is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com**.

That's not an inherently bad thing. Satisfaction with the status quo breeds complacency, which will squelch progress faster than you can say "standardized external disk subsystem." Moreover, even though dissatisfaction tends to arise when some party isn't performing up to speed or living up to his end of a particular bargain, it can still be a good thing. As long as it's a vendor that's dissatisfied.

Take, for example, the announcement last week of an agreement between EMC and Intel, under which Intel will sell rebranded low-end EMC disk arrays. It's hard to imagine that EMC would have forged that agreement if it was totally satisfied with its existing arrangement with Dell to resell low-end storage systems.

Andrew Monshaw, general manager of systems storage at IBM, said in an interview with *Computerworld*'s Lucas Mearian last week that the Intel deal marks the beginning of the end of EMC's pact with Dell. "I think perhaps we're seeing our first signs of divorce here," he said.

Of course, that's wishful thinking on IBM's part. EMC and Dell are making a ton of money from their relationship, so they'll stay together for the sake of the bucks. But the Intel deal certainly indicates that EMC is antsy enough about Dell to want to hedge its bets. Whatever dissatisfaction lies there has created an alternative that many users who are disenchanted with Dell's customer service performance will no doubt embrace.

That's not to say that EMC doesn't have its own disenchanted users to deal with. Oliver Fischer-Samano, IT director at Baerlocher Productions USA, told Mearian last week that he has refused to buy small storage systems from EMC in the past because its sales reps soured him on the company. His problem isn't with the channel, but with EMC itself, which he finds "very arrogant."

Jerry Bartlett, CIO at TD Ameritrade, said in a panel discussion I moderated last week that his company is almost exclusively an EMC shop. But he indicated that nothing is necessarily forever.

That exclusivity is "a bit problematic because it limits your choices," Bartlett acknowledged. "That is one of the inhibitors to flexibility. The day you can move to a more heterogeneous environment, then you can introduce true competitiveness."

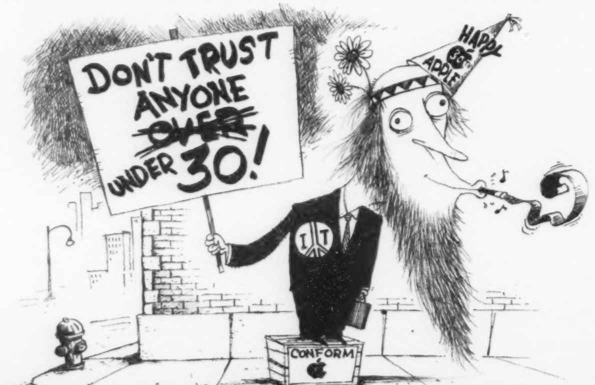
But getting to that heterogeneous state requires storage vendors to fulfill their promise to deliver interoperable products, and Bartlett gave them a grade of C- on that score. Another member of the panel, Charles Inches, IT director at Corner Banca in Lugano, Switzerland, was less charitable. He gave the vendors a D.

"I'm very, very critical" of the vendors' track record on interoperability, he said. "Almost all the vendors are bunched up into the [Storage Networking Industry Association], but they're not delivering yet."

Inches was equally scathing in his assessment of storage vendors' pricing policies. Storage pricing is a "Turkish carpet bazaar," Inches said, responding to a question I posed on the transparency and sensibility of pricing practices. The panelists were especially critical of having to license storage management software on the basis of server capacity — a practice that Fischer-Samano called "just outrageous."

I came away from SNW convinced that what we need is a lifestyle change, because having to constantly be on the lookout for alternatives is lousy. Maybe being satisfied isn't such a bad thing after all. ▸

Don Tennant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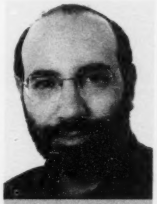
DAVID CLARK

MICHAEL GARTENBERG

IT Could Be Drafted Into Boot Camp

I'VE TALKED in the past about how IT departments need to rethink their positions against the widespread use of Apple computers and Mac OS X in their organizations. I've talked about the fact that many of the old myths from the mid-'90s about the Macintosh just aren't true. There's plenty of software for the platform, proprietary protocols are a thing of the past, and the price of entry isn't that different from what you'd pay for a system from any Tier 1 PC vendor.



MICHAEL GARTENBERG is vice president and research director for the Personal Technology & Access and Custom Research groups at JupiterResearch in New York. Contact him at **mgartenberg2@optonline.net**. His weblog and RSS feed are at **http://weblogs.jupiterresearch.com/analysts/gartenberg**.

I won't even go into issues such as virus attacks and spyware being virtually nonexistent problems for Mac users. Instead, I'll focus on three new reasons for business users to look more closely at Apple Computer: the company's migration from Power PC to Intel processors, its announcement of Boot Camp for running Windows XP natively on an Intel Mac, and the recently announced delay of Microsoft's Vista operating system. All are compelling arguments for deploying Apple systems where they can do the most good.

Many Mac users were shocked last year when Apple said it would move to Intel chips, but even before last week's Boot Camp announcement, I saw this transition as providing an opportunity for IT departments. For IT, the most important aspect of the Apple migration to Intel isn't the boost in performance over time. That's not an IT issue. For IT, the most important aspect of the Apple migration to Intel is what Apple on Intel means for the many business users who need to run Windows for corporate applications that just aren't available on Mac OS. Boot Camp will resolve a lot of potential holdups to adoption.

Now in beta and available for download, Boot Camp allows anyone with an Intel Mac and a copy of Windows XP with Service Pack 2 to run Windows. That's right — no more virtual anything.

A group of programmers had already demonstrated that running Windows natively on an Intel-based Mac was possible. But that was a clever hack that no sane IT shop would ever support in production. Boot Camp changes the equation, and it will be a part of the upcoming Mac OS X Version 10.5, code-named Leopard.

Does deploying dual-boot Macs raise total cost of ownership? Possibly, but I suspect that issue will be minimal, given that most organizations already support multiple versions of operating systems. Of course, any TCO increase would have to be offset by productivity boosts from those users given access to both operating systems.

The final reason for IT to look at Mac OS is the latest delay of Windows Vista. While the delay holds no earth-shattering implications for IT, it does mean there's a window of opportunity to take a closer look at what else is out there now, ready to be put to use in your organization.

I'm not suggesting that most businesses would be better served deploying Mac OS over Windows. I'm not even suggesting that Mac OS is right for some aspect of every business. But these developments do dangle some low-hanging fruit that IT departments can exploit for positive results. In this case, that fruit just may be an Apple. ▸

MICHAEL H. HUGOS

Factoring Complexity

GOOD MORNING, my stalwart friends and Agility Corps recruits. As I promised last month when I inaugurated this virtual group of IT practitioners, today I'm going to talk about encounters with complexity.

Complexity is that place where huge systems-development budgets disappear, leaving nothing behind but empty checkbooks, loose-leaf binders full of incoherent specifications, and half-baked program code that crashes unexpectedly. It's the places on the map of a development project where orderly logic gives way to great foggy spaces. All that is known about these spaces is, "There be dragons here." Many brave system developers have marched into them and gotten lost.

MICHAEL H. HUGOS is a CIO at large, author and speaker. He is also a member of the 2006 *Computerworld* Premier 100 IT Leaders class. His books include *Essentials of Supply Chain Management* and *Building the Real-Time Enterprise: An Executive Briefing* (both published by John Wiley & Sons). He can be reached at **mhugos@yahoo.com**.

Developers' senses are overwhelmed by detail. They are assailed by hard-to-understand patterns. There is much hollering and handwaving as the business folks describe all the things that could happen and all the things that must be guarded against. Many fine developers emerge from these places with slack jaws and glassy eyes. They babble about disjointed facts and are often on the verge of tears. They have been devastated.

Courage alone is not enough to survive an encounter with complexity. You need good technique, too. In the heat of the moment, smart use of the six core techniques I have written about this past year is what separates brave winners from valiant losers. Your company turns to you, as a member of the Agility Corps, when the going gets complex. It needs you to find a way through those foggy spaces to build the agile systems it needs in order to reach its destination. Are you ready?

Now tell me, how do we apply simple techniques to cut through the noise and find the simple patterns and components that make up complex situations?

Before you answer that question, consider how mathematics deals with complexity. Do you remember trigonometry and those tests where you had to graph solution sets for big, hairy quadratic equations? Remember how those equations made your heart race and your blood pressure rise? And do you remember that ray of hope when you realized that you had been taught a technique called factoring that lets you simplify these equations? For example, what if you are asked to calculate *x* and *y* values and plot the graph of this equation?

$$\frac{[y^2]^2 + 2y^2(2x) + (2x)^2}{2x + y^2} = 0$$

If you don't panic, if you keep your cool and apply factoring to the equation, it simplifies to become:

$$y^2 + 2x = 0$$

Now you can easily calculate the *x* and *y* values.

By direct analogy, there are two techniques to apply in complex business situations. First, use process mapping to identify high-level activities and break those activities into their component tasks. Then use data modeling to define the structure and volume of the data handled by those tasks.

Presto, you just factored business complexity and revealed its simple underlying patterns. Now you can describe the processing logic and create a system prototype to deal with the situation. Congratulations — you earned your pay. Take the rest of the day off.

Before we finish, though, I noticed that a few of you froze up when confronted with that equation. I also know that some of you panicked recently when confronted with a complex business situation. Calm down. Take a deep breath. Go back and review the core techniques and practice using them until you feel confident that you can hack it in the Agility Corps. And before you go — give me 50 push-ups. ▸

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READERS' LETTERS

Presper Eckert's Memory Was Faulty

I READ THE recent interview with Pres Eckert with great interest ["The Eckert Tapes: Computer Pioneer Says ENIAC Team Couldn't Afford to Fail – and Didn't," Feb. 20]. I knew Pres and his family, as well as several others involved in the ENIAC project. They were all bright, hard-working and interesting people. My father, Iredell Eachus Jr., also worked on the ENIAC project as an engineer. He and Pres and some others were classmates. Unfortunately, my father died this past December. However, we had some of his notes transcribed.

My father's account of the development of a functioning electronic computing machine is different from Presper's recollections as recently presented in your publication. The interview presents Pres' view that no one else made any significant contribution to the effort. For those who were there, it became apparent that everyone else was systematically written out of the history, particularly those who could endanger Pres' quest for patents covering the basic circuits of the machine, a fight that lasted over 25 years. The failure to secure the critical patents is the ultimate statement that the machine was the result of many minds and not a solo act.

David E. Eachus
Clearwater, Fla.

THE ARTICLE did explode some ENIAC myths, but it perpetuated another: that the ENIAC was the "first practical, all-electronic computer."

It is true that ENIAC holds the title to being the first large-scale electronic computer, and perhaps even the first practical computer.

But the first electronic digital computer was invented at Iowa State University by John V. Atanasoff and Clifford Berry during the period from 1937 to 1942, at least four years prior to ENIAC. In fact, ENIAC co-inventor John Mauchley incorporated Atanasoff's design for an accumulator in the ENIAC.

Bob Farnham
Assistant professor of computer science, Graceland University, Lamoni, Iowa, farnham@graceland.edu

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You Are Here™

THE DEVELOPMENT of business applications for vehicular GPS will remain costly because of car and truck makers' proprietary in-vehicle systems ["GPS Repositions for Business," Feb. 27]. Much as it took the EPA to do what the NHTSA couldn't achieve with onboard diagnostic data standardization, it may take mandates from the FTC to get manufacturers to conform to a vehicular data-bus standard.

Until vehicle owners can easily select or switch services by simply installing a telematics modem that is specific to a provider's wireless network, don't expect widespread everyday use by the public. In the meantime, costly proprietary equipment is what ensures market share for those companies that can afford to compete in niche applications.

William Reimann
Oakdale, N.Y.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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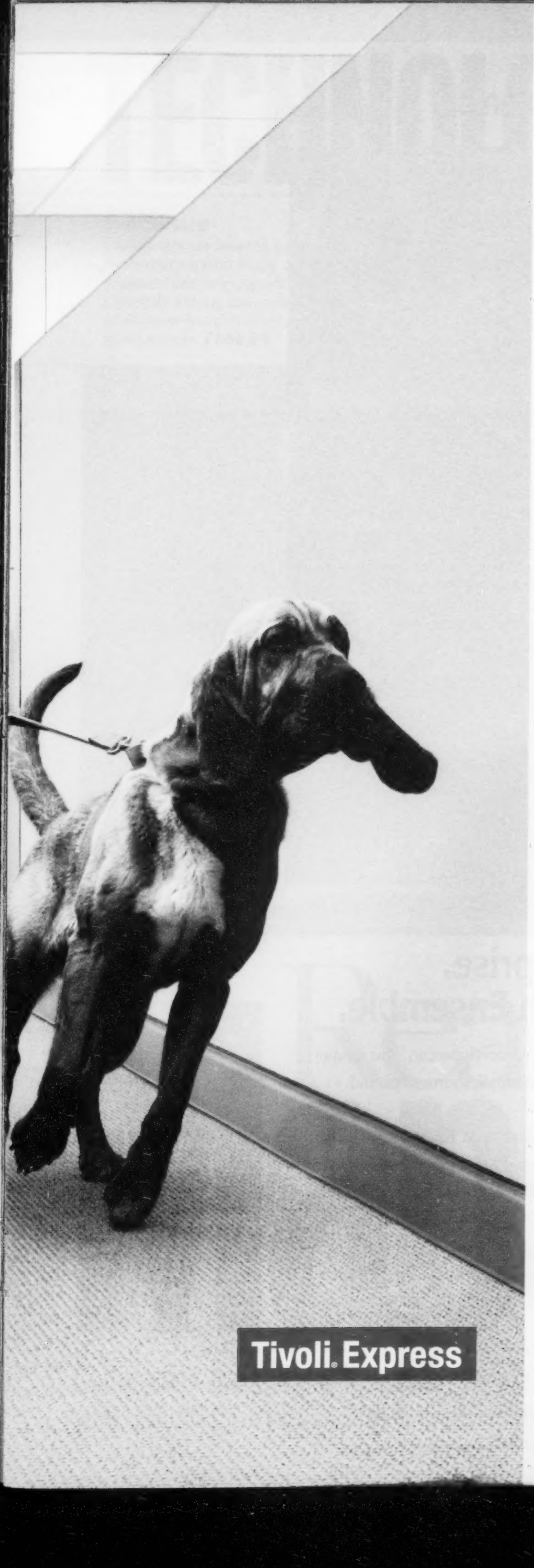

_INFRASTRUCTURE LOG

_DAY 49: Things are out of control. Our system's just not secure, flexible or reliable enough. Gil bought some "infrastructure bloodhounds" online. He says they can sniff out any problem.

_DAY 50: Bloodhounds aren't as good at sniffing out network problems as they are at chewing Ethernet cables.

_DAY 52: I've got it: IBM Tivoli Express middleware. It's a series of I.T. management solutions designed and priced for mid-sized businesses like us. It's secure, boosts uptime, and protects our data with automated backups. Our IBM Business Partner even customized and implemented it for us.

_Remind Gil: dog hair and computers, very bad combo.

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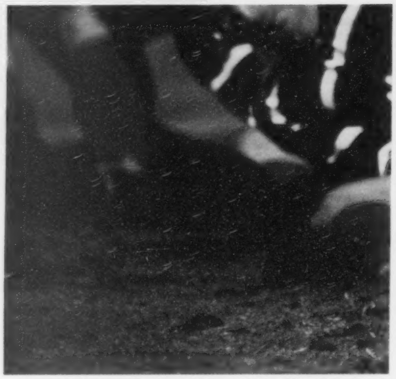

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TECHNOLOGY

04.10.06

Full Service

Companies are looking to technologies that support many e-service channels and help agents move smoothly among channels to provide an integrated response to customers. **PAGE 34**

QUICKSTUDY

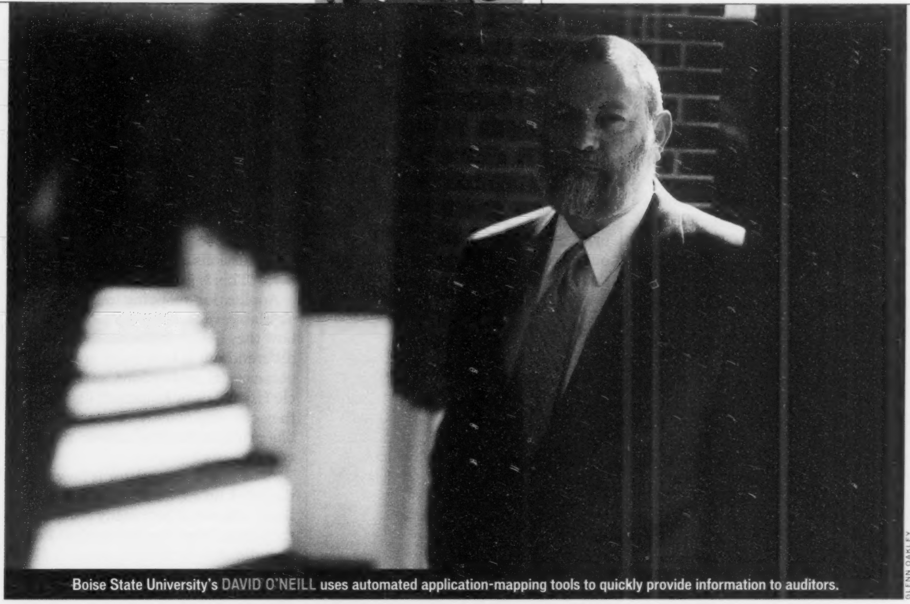
Ultrawideband

Ultrawideband is a wireless communications technology that transmits large amounts of data over short distances using very low power. Learn all about it in this week's primer. **PAGE 36**

SECURITY MANAGER'S JOURNAL

Securing Data When Data Is Everywhere

C.J. Kelly discovers that users are creating Access databases, which she realizes are yet another way for sensitive data to be compromised. **PAGE 38**



Boise State University's DAVID O'NEILL uses automated application-mapping tools to quickly provide information to auditors.

GLENN OAKLEY

Reality Maps

Companies are finding that application-mapping software can provide critical information and uncover surprises about what's running on their networks. **By Sue Hildreth**

WHEN AUDITORS COME KNOCKING at the door of Boise State University's IT department, executive director David O'Neill has a quick way of dealing with them. Rather than rounding up senior engineers to sit down with the auditors and spend hours answering questions about the university's IT systems, O'Neill instead relies on an automated application-mapping tool to quickly produce an up-to-date inventory and diagram of all the software systems and the relationships among them.

The old approach of getting auditors what they needed could consume as much as three to five days of his senior engineers' time, says O'Neill. "Since most of these audit questions are really almost inventory questions, I said, 'Let's have a machine answer those questions.' We don't need a bunch of my senior engineers doing it. That's too damned expensive," he explains.

The product Boise State is using, nLayers Inc.'s InSight appliance, can, for instance, show whether backups are happening as expected, whether a sensitive system is open to access by other servers when it shouldn't be, or if there's an unauthorized desktop that has found a back door into a student-records database server. "You think you're the only one serving an application, but guess what — someone else is serving it too. Or there's superfluous data moving around on the network. Or you've got folks accessing [Internet] sites they shouldn't be," says O'Neill.

Boise State uses Packeteer Inc.'s PacketShaper to make network traffic visible, but it doesn't show what that traffic represents in terms of applications, locations and other specifics. The mapping tool gives O'Neill access to that intelligence.

The Need to Know

Like O'Neill, IT managers at large corporations are increasingly concerned with tracking the continuous changes to their IT environments. They must be able to provide up-to-date information about their systems to internal and external auditors and quickly pinpoint problems in critical applications. And they can't plan for the future growth of the IT infrastructure unless they have full knowledge of the existing applications and their interdependencies.

Given that most large organizations are supporting dozens — sometimes hundreds — of applications across global networks, it's nearly impossible to keep a real-time record of the IT enterprise. That's why application-discovery and -mapping technologies are gaining ground in corporate

Why App Mapping?

There are three primary uses for IT application-mapping tools:

- Documenting the existing application infrastructure for auditors and compliance purposes.
- Building a view of the IT infrastructure for impact analysis and root-cause analysis.
- Determining the actual, versus supposed, configurations of software and services.

SOURCE: GARTNER INC., STAMFORD, CONN.

IT shops. Unlike network monitoring tools or mapping tools that focus on finding hardware, application mapping is primarily concerned with software components and their relationships, though the tools may also include hardware information as it pertains to an application.

For instance, application mapping can be very useful for IT architects who want an accurate inventory and diagram of the IT infrastructure so they can model future enhancements. Without a discovery capability, architects must manually input the information, which can result in errors as well as a static diagram that soon becomes outdated. Some architecture-modeling tools, such as those offered by Troux Technologies Inc. and Telelogic AB, are able to import architecture data from other vendors' mapping tools.

"We're seeing alliances between modeling tools and operational tools," says Gartner Inc. analyst Robert Handler. He notes that many organizations unwittingly have many redundant or just plain unnecessary applications.

"As much as 30% of IT budgets are spent on the support of applications that shouldn't have been approved in the first place," Handler says.

Automated discovery and mapping tools can help with application monitoring and configuration management tasks, he says. Increasingly, mapping functions are being merged into larger product sets, such as system monitoring and management suites, or configuration management applications.

Quixtar Inc., an online retailer of beauty and nutrition products, bought Mercury Interactive Corp.'s Business Availability Center to consolidate its numerous monitoring consoles and better diagnose problems with its Windows .Net- and IBM WebSphere-based infrastructure. The product includes diagnostic tools, a configuration management database, service-level management and the Mercury Application Mapping (MAM) tool.

Greg Robinson, Quixtar's senior systems support specialist, says he experienced only two problems during installation. One involved the installation of a MAM agent on an application outside the firewall. The other challenge was figuring out which types of data Quixtar wanted to collect. "At first, I was overwhelmed with the amount of information," Robinson says.

The tool provides a way to create different views of the infrastructure and systems, depending on the role or need of the user. "We can slice and dice the view of the dashboard and create different views with differing levels of complexity," says Steve Keselring, manager of IT infrastructure at Ada, Mich.-based Quixtar.

Mapping tools also help developers and operations staff to identify problematic changes to applications. Liberty Mutual Group Inc., a Boston-based global insurance company, began using Mercury's MAM product a year ago in order to get a better handle on configuration changes.

"A lot of developers have access to the production environment, and they may want to change something they believe is basic, like a data file, so they don't bother to open a change ticket. Then the next time someone needs to make an authorized change, they have the wrong information about the configuration," says Stephen Wrenn, senior director of IT service management at Liberty Mutual. "In many companies, 50% to 60% of outages are caused by changes."

Wrenn's team has just started using MAM to run comparisons between change tickets and actual changes to more than 40 applications. Prior to using a mapping tool, he says, his company relied on manual diagrams based on staff knowledge of the systems.

Identifying Requirements

Organizations often have multiple needs for a mapping tool. Boise State University is expanding its use of nLayer software into two additional areas: monitoring application access and traffic over the network, and tracking software license usage.

ING Investment Management, an international banking and asset management company with U.S. headquarters in Atlanta, is leveraging mapping information for three key uses. The mapping data is used by the company's IT architects, help desk support staff and operational IT staff to troubleshoot major systems, says Vincent Moriarty, assistant vice president of technology management. ING has a primarily Windows-based environment. It gathers software and hardware configuration data via Microsoft Corp.'s Systems Management Server (SMS) and feeds it via custom automated interfaces into Infra Corp.'s help desk application and Telelogic's System Architect modeling tool. System Architect enhances the data from SMS using its own templates to add descriptive information on application and database relationships, says Moriarty.

"By getting information on the applications that we have, and on the relationships between them, we're able to understand how a new vendor package might fit into that environment," he says. ING uses the mapping information with System Architect to model about two-dozen software initiatives annually, says Moriarty.

At the help desk, having client configuration data on hand makes helping users faster and less frustrating. "Without it, we would either need a large manual effort to collect that information in advance, or the help desk technician would have to ask a lot of questions each time a user calls," says Moriarty.

The Agent Debate

APPLICATION-MAPPING TOOLS can work either as agent-based or agentless software. Increasingly, products offer both options. Agentless products do not install anything on other servers and clients and instead rely on polling or network traffic sniffing to locate application components. They may collect data via ODBC, Telnet, Secure Shell, Windows Management Instrumentation, SNMP or FTP.

Agent-based discovery tools, on the other hand, install agents on each server to gather information and send updates to the mapping application. That can be problematic in large organizations if one unit doesn't want another unit's IT department to install the agents on its servers. But agents are capable of gathering more detailed data on an application and can send updates whenever there is a change – not just when polled by the server.

Investment banking firm JPMorgan Chase & Co. is using Symantec's Relicore product with agents specifically for its real-time capabilities. "The agentless ones we've seen all do polling at designated times. We need to know right away if there is a change," says Kurt Hansel, assistant vice president for quality assurance infrastructure at JPMorgan.

Gartner analyst Ronni Colville explains, "Some people are afraid of security issues with agents. And data center folks are afraid of overutilization. But at the end of the day, if you want to understand in-depth changes with an application or on a server, you need an agent."

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The mapping data also helps ING pinpoint problems with its servers. For example, the company recently identified the cause of the failure of a scheduling agent on a server at its Hartford, Conn., data center. It had been inadvertently configured to act as a forwarding agent for data flowing between the Atlanta and Denver offices and was overwhelmed with traffic. Without autodiscovery and mapping, much greater effort would have been needed to solve the problem, says Moriarty.

"Before, we would have to put network monitoring equipment on the data lines in and out of our data centers and track the transmissions at a very fine level of detail to identify where they're coming from, the nature of the transmissions and the volumes," he says. "This is just more efficient."

Application-mapping tools have similar purposes, but they differ in how they detect applications. Another differentiator is how many common commercial applications, such as Oracle Financials or Microsoft Exchange, they can map quickly via templates or blueprints of the applications' main components.

"The real differentiator is how well they pick up application stuff, and that's a factor of how many blueprints they have," says Gartner analyst Ronni Colville.

They also differ in whether they use agents to collect information or use agentless technologies (see story at left).

While demand for mapping tools will no doubt grow, Colville expects standalone products to disappear by 2008 as they are merged into other products such as application monitoring, IT asset management and configuration management suites. She notes that there has been a series of recent acquisitions of mapping vendors. For example, IBM bought Collation, Mercury acquired Appilog Inc. and Symantec Corp. purchased Relicore Inc.

"They're all getting gobbled up," Colville says. Nevertheless, she adds, "it's still a good value, and I think clients should buy it. A lot of data centers have no idea what's there. . . . They're not ready for compliance initiatives. These tools, because they can discover in mostly real time what's out there, offer a really big advantage." ▸

Hildreth is a freelance IT writer based in Waltham, Mass. She can be reached at Sue.Hildreth@comcast.net.

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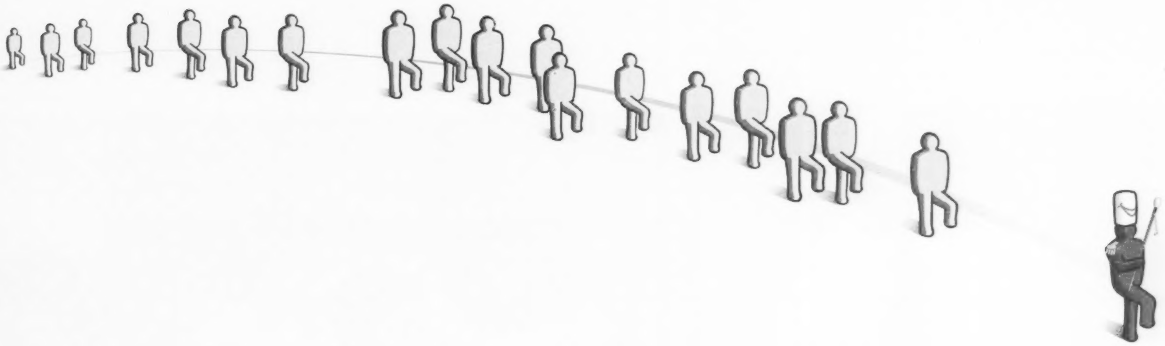

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_INFRASTRUCTURE LOG

_DAY 8: I give up. Our infrastructure is so inflexible. Our apps and processes don't work together. We can't respond quickly to change. It's out of control.

_Gil had an epiphany. Duct tape. A few dozen rolls later and he's integrated everything, and everyone, by hand.

_DAY 10: Duct tape can fix many things. Basketballs. Sofas. Doorknobs. But not widespread app and process inflexibility.

_DAY 13: I've found something better: IBM WebSphere middleware. It'll make our infrastructure more flexible by seamlessly integrating our apps. We can change processes in a snap and use what we already have—even apps from SAP and Oracle. And with IBM's industry-specific expertise, we're on our way to enabling a service-oriented architecture.

_Hmmmm...WebSphere. More powerful than duct tape.

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FULL Service

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PRICELINE.COM Inc., the online travel service, has bet its business model on the fact that Web-savvy customers like to help themselves — in this case, to deals on airfare, hotels, car rentals and the like. The Norwalk, Conn.-based company has extended that model to its customer service operations, adopting an e-service strategy to complement its telephone-based call center. If customers run into trouble during a travel search, they're encouraged to try self-service or e-mail options — more cost-effective ways to handle services issues — before resorting to a phone call.

Like Priceline.com, companies everywhere are leveraging e-service technologies — Web self-service, chat, e-mail response management, collaboration tools, remote diagnostics — as an alternative to the phone for interacting with customers. One reason is that customers today want the additional channel options that e-service offers them. According to a 2005 survey from Wellesley, Mass.-based Service Excellence Research Group LLC (ServiceXRG), 60% of high-tech customers attempt to solve their own problems through self-service knowledge bases before trying interactive channels.

Some vertical industries have been leveraging e-service technologies for some time, and cost reduction has been the primary driver. Conventional wisdom says you can push customers from the phone to lower-cost channels and watch service-delivery expenses drop. However, companies are finding that customer service doesn't conform to such a simple paradigm. To be effective, e-service deployments require considerable investments of time and money — in knowledge-base creation and maintenance, sophisticated search technologies, incident tracking and workflow tools, and channel integration — so customers get the same experience regardless of how they contact providers. So although the cost benefits that can result from e-service initiatives have not declined, businesses are increasingly looking at other reasons to justify investments.

In a recent survey conducted by ServiceXRG, 90.4% of respondents said customer satisfaction is the leading driver for implementing services such as remote control, chat and collaboration, while 94.4% named customer satisfaction as the primary driver for self-service.

"Four or five yeas ago, call deflection was the primary driver [for our e-service initiatives], but now we're looking at what additional value we can bring," says Paul Esch, director of global support services at Espoo, Finland-based Nokia Corp. Nokia has invested considerably in its third-party e-service portal and underlying intel-

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SOURCE: JOHN RAGSDALE, ANALYST, FORRESTER RESEARCH INC.

A Measured Approach

If businesses intend to make e-service channels critical links in their customer service chains, they need to measure their performance against meaningful metrics, say experts. Problem is, some of the metrics that have long characterized telephone-based service – such as hold times – don't necessarily translate to e-service deployments and don't reveal much that can translate to tangible business benefits.

For example, it's difficult to standardize on a definition of what constitutes a successful Web self-service session, says Tom Sweeny, principal at ServiceXRG. Companies use call deflection as a metric for self-service, and while that's a meaningful goal, the fact that a customer didn't pick up the phone following a knowledge base search may just mean he gave up. Even if a person finds the answer, says Sweeny, he may not be comfortable implementing it without following up with a phone call, especially in technical support situations. So even though the self-service action may have been successful, it didn't result in call deflection.

Jeff Vargas, knowledge manager at Nokia, agrees that e-service brings new wrinkles to service-delivery measurement. "You need to be careful about how you define that a case has been successfully closed," he says. Vargas' organization has been working with industry groups to determine how different companies are defining metrics for self-service knowledge-base initiatives. "It's definitely a challenge to come to any kind of standard," he says. Vargas says Nokia is considering new methods – such as Web-based surveys that pop up during sessions and ask specific questions related to successful transactions – that are more revealing than, say, whether Web interactions are up and phone calls are down.

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Large companies making e-service part of their CRM and other customer-facing initiatives have seen solid returns and customer adoption, but they continue to face significant technology and process challenges, according to John Ragsdale, an analyst at Forrester Research Inc. Those challenges include the need to provide agents with a single view into customer interactions, ensure that customer data is consistent across channels, integrate support channels so customers can easily move from one to another, and streamline processes so contacts can be easily escalated along with their associated inquiry histories.

Multichannel integration challenges have been eased by application suites built on systems that provide a common knowledge base, queuing and routing capabilities, and a unified view into customer interactions, regardless of which channel they come from. These suites are available from e-service vendors such as Kana Software Inc. and eGain Communications Corp., as well as enterprise application vendors such as Oracle Corp., says Ragsdale. Meanwhile, switch platform vendors, such as Genesys Telecommunications Laboratories Inc., are offering e-mail response, Web collaboration and other e-service tools as part of their infrastructures. Users still face the task of integrating customer-facing databases with front- and back-office databases that inform customer transactions, such as financials and order fulfillment.

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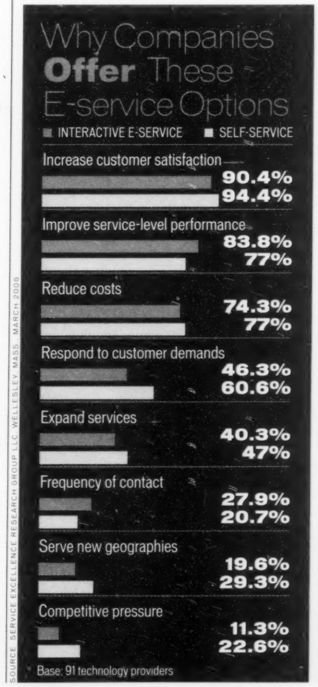

SOURCE: SERVICE EXCELLENCE RESEARCH GROUP LLC, WELLESLEY, MASS., MARCH 2006

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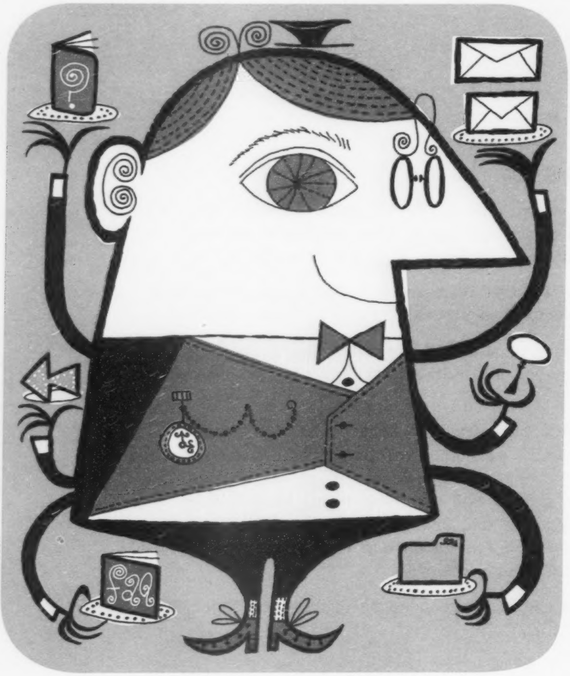
Though the implementation of the suite of products — which also includes financials, manufacturing resource planning and service-delivery applications — and the associated legacy-data migration was difficult, Al-Khazraji says the effort has paid off.

"It's such a complex architecture that our legacy data wasn't even enough to create a single record in Oracle. We initially had to create a lot of default values to pass to Oracle and work on them afterward," Al-Khazraji says. But Oracle has allowed Utility Service to tie all of a customer's interactions with the company to a single customer ID and eliminated manual indexing. "Someone just types in a customer ID, and it's already indexed 90 different ways," he says.

Customer surveys reveal a service satisfaction rate of 92% for 2006. Moreover, complaints about service have dropped 40% over the past two years, according to Al-Khazraji.

"Our portal has greatly enhanced our ability to compete, especially in getting large contracts," he says. "Our customers can manage their interactions with us and see what our customer service reps see. We recently closed one of the biggest deals in our history because of the transparency we are able to provide through our portal." ◆

Gilhooly is a freelance writer in Falmouth, Maine. You can reach her at kymg@maine.rr.com.



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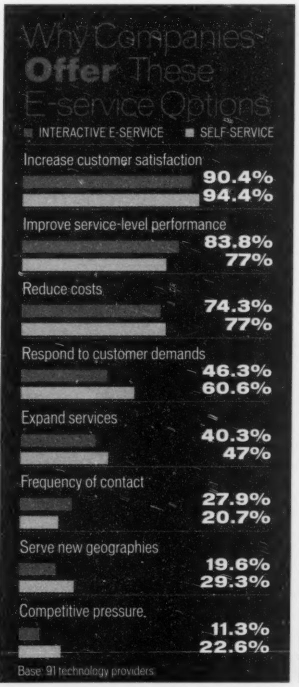

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"It's such a complex architecture that our legacy data wasn't even enough to create a single record in Oracle. We initially had to create a lot of default values to pass to Oracle and work on them afterward," Al-Khazraji says. But Oracle has allowed Utility Service to tie all of a customer's interactions with the company to a single customer ID and eliminated manual indexing. "Someone just types in a customer ID, and it's already indexed 90 different ways," he says.

Customer surveys reveal a service satisfaction rate of 92% for 2006. Moreover, complaints about service have dropped 40% over the past two years, according to Al-Khazraji.

"Our portal has greatly enhanced our ability to compete, especially in getting large contracts," he says. "Our customers can manage their interactions with us and see what our customer service reps see. We recently closed one of the biggest deals in our history because of the transparency we are able to provide through our portal." ▸

Gilhooly is a freelance writer in Falmouth, Maine. You can reach her at kymg@maine.rr.com.

Ultrawideband

DEFINITION

ULTRAWIDEBAND is a wireless communications technology that transmits large amounts of data over a short distance using very low power. UWB sends very precisely timed short-duration digital pulses across a number of frequency channels simultaneously.

QUICK STUDY

BY RUSSELL KAY

THERE'S CERTAINLY no lack of choices when it comes to wireless communications and networking technologies. With all the currently available forms of wireless access — cell phones, 3G, Wi-Fi, WiMax, Bluetooth, power lines, and 802.11a, b, g and n — you wouldn't think there's room for anything more. But technology marches forward, and in the next couple of years, we're going to be seeing a new and different wireless technology.

The new kid on the radio block is ultrawideband, also known as UWB or digital pulse wireless. It will help deliver television programs, movies, games and multimegabyte data files throughout our wireless homes and offices. UWB is faster than current wireless LAN technologies and provides a short-range, high-bandwidth pipe that eliminates interference.

Origins of UWB

Gerald F. Ross first demonstrated the feasibility of UWB waveforms for radar and communications applications in the late 1960s and early 1970s. Originally developed by the Defense Advanced Research Projects Agency, the technology was called baseband, carrier-free, impulse communications or time-domain signaling, until the U.S. Department of Defense named it ultrawideband in 1989.

In some respects, UWB technology goes back to the dawn of radio and Guglielmo Marconi's early spark-gap transmissions. UWB is also a successor to spread-spectrum radio (also called frequency-hopping), a World War II technology that splits a broadcast across many different radio frequencies, using one at a time to avoid jamming. (Curiously enough, spread spectrum was invented — and patented — in 1942 by actress Hedy Lamar and composer George Antheil.) In contrast, UWB uses every frequency available to it, all at the same time.

UWB isn't a direct substitute for any other form of wireless communications, but it does some things that no other technology can match. A UWB transmitter sends billions of short-duration pulses across a wide spectrum of radio frequencies. These RF bursts come so fast — lasting only from a few trillionths of a second to a few nanoseconds — that each actually uses only a few cycles of an RF carrier wave.

This short duration gives UWB waveforms some unique properties. They are relatively immune to multipath cancellation effects, such as when a strong reflected wave arrives out of phase with the direct path signal, reducing the signal strength in the receiver. UWB pulses are so short that the direct signal has come and gone before the reflected path arrives, so no cancellation takes place. Because UWB pulses are so short, they can use very wide frequency spectra; this allows signals to use very low power, which minimizes interference with and from other radio frequencies, reduces health hazards and often falls below the normal noise floor, thus making it harder to detect.

Technically, UWB is defined as any radio technology whose spectrum occupies more than 20% of the center frequency, or a bandwidth of at least 500 MHz. Modern UWB systems use various modulation techniques, including Orthogonal Frequency Division Multiplexing, to occupy these extremely wide bandwidths.

In 2002, the Federal Communications Commission approved the commercial use of UWB transmissions in the range from 3.1 GHz to 10.6 GHz, at a limited transmission power. UWB systems can, in principle, be designed to use nearly any part of the RF spectrum.

Applications

In its current state of development, UWB is aimed at high data rates for personal-area networks, which have an effective operating radius of approximately 10 meters or less. Though similar to the current capabilities of Bluetooth (see story at left), it uses a very different technology. UWB transmissions trade distance for bandwidth, so the greater the range, the lower the final data rate. Range can be extended up to perhaps a kilometer by using high-gain antennas and reducing performance.

One of UWB's defining characteristics is that it requires very little electrical power — one source says it uses 0.001% as much power as a cell phone — and thus is virtually undetectable by conventional radios, which see the UWB signal as just very quiet background noise. Thus, a UWB telephone

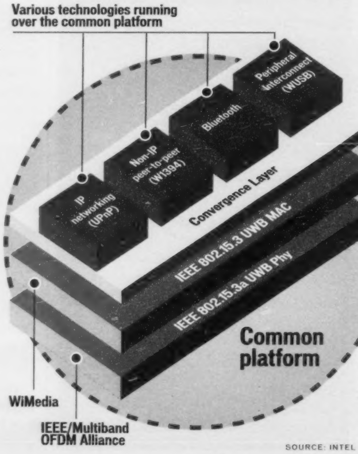
UWB, Bluetooth and IEEE 802.15.3

ULTRAWIDEBAND will not replace Bluetooth for short-range communications, because Bluetooth is a complete, end-to-end communications standard, whereas UWB is merely a radio technology that can be used as part of an overall standard. Bluetooth defines how data is managed, formatted and physically carried over a wireless personal-area network (WPAN). However, designers expect that future Bluetooth implementations will be built on top of UWB signals.

802.15.3 is the IEEE standard for a high-data-rate WPAN designed to provide sufficient quality of service for the real-time distribution of content such as video and music. It is ideally suited for a home multimedia wireless network. The original standard uses a traditional carrier-based 2.4-GHz radio as the physical transmission layer.

802.15.3a, a follow-on standard still in the formative stages, will define an alternative physical layer. Current proposals based on UWB will provide more than 110Mbit/sec. at a distance of 10 meters and 480Mbit/sec. at 2 meters. This will allow the streaming of high-definition video between media servers and high-definition monitors, as well as the extremely fast transfer of files between servers and portable devices.

UWB's Role in Wireless Convergence


Various technologies running over the common platform
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Non-IP peer-to-peer (W1394)
Bluetooth
Peripheral Interconnect (WUSB)
Convergence Layer
IEEE 802.15.3 UWB MAC
IEEE 802.15.3a UWB Phy
Common platform
WiMedia
IEEE/Multiband OFDM Alliance

SOURCE: INTEL CORP.

would use so little power that it could remain on for weeks without needing to be recharged. And because it uses all available spectra, UWB may well be cheaper to design and manufacture than conventional radios that require careful tuning to a specific frequency.

A UWB transmitter and receiver must be closely coordinated and synchronized to send and receive pulses with an accuracy of trillionths of a second. The receiver responds only to a familiar pulse sequence. This makes UWB very secure, which explains why it was once used for clandestine communications by military and espionage agencies. UWB's broad frequency range includes the ultralow frequencies the U.S. Navy uses to communicate with submerged submarines.

UWB products will include radar and electronic location and positioning devices in addition to radios. UWB radar can see right through walls, ceilings and floors that would block or reflect other types of radio signals. As an electronic measuring technology, UWB is more accurate than Global Positioning System satellites, and it can be used indoors. The Navy reportedly plans to put UWB markers on almost everything it ships overseas, just to track materiel and keep it from being stolen.

Eventually, UWB networks are expected to run at speeds up to a gigabit per second and therefore should be able to handle all of the phone, television, and Internet traffic for a home or small business. ◗

Kay is a Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

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To Learn More

Here are some good sources of information on ultrawideband:

- For a short history of UWB communications and an FAQ, follow the links at **www.multispectral.com.**
- A good introduction to UWB is at **http://en.wikipedia.org/wiki/Ultra_Wideband.**
- An introduction to Intel's take on UWB is at **www.intel.com/technology/comms/uwb.**

Two good technical summaries of UWB:

- "Ultra Wideband – the Next-Generation Wireless Connection," by Rafael Kolic **www.deviceforge.com/articles/AT8171287040.html**
- "Why Such Uproar Over Ultrawideband?" by John McCorkle **www.commsdesign.com/design_corner/OEG20020301S0021**

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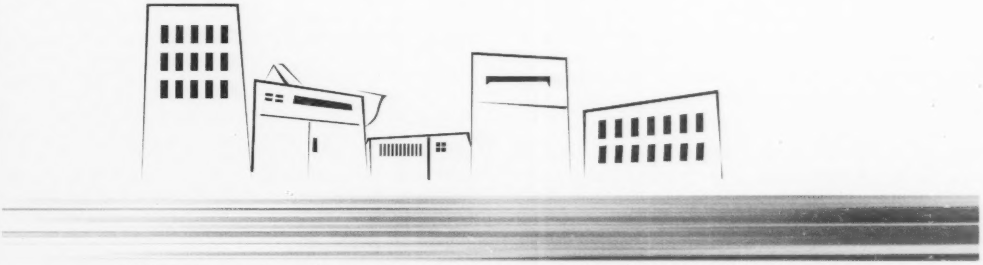
and they said it couldn't be done.



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Securing Data When Data Is Everywhere

When our security manager realizes users are creating Access databases, she sees a new way to compromise data. By C.J. Kelly

SECURITY MANAGER'S JOURNAL

WHEN it comes down to it, a security manager's job is about protecting information assets. But no matter what kind of business you're in, if you can't find all the data, you can't protect it.

Users put data where they need it, and they don't think about who has to know what they're up to in order to protect the data. The problem for security staffs is identifying where all the data is and making sure the proper controls are in place to protect the information.

We recently discovered that agency personnel often create Microsoft Access databases to help them manipulate data and create reports. The users who originate such databases, or the heads of their departments, may be deemed the owners of the data, but IT remains its custodian. Unfortunately, many data owners don't understand the concept of security controls, or even the need for them. It becomes the responsibility of IT security to implement the necessary controls.

Ideally, IT security would understand how people work, what they need and what they are trying to accomplish. Then we could get in front of any effort to manipulate data to make sure that something like an Access database has the proper security controls in place. That's not usually how things go. Generally, data is saved in various formats and then e-mailed, transferred, shared and printed. Afterward, the original data has morphed and has numerous owners and locations.

The realization that users were putting data that could be considered sensitive in Access databases meant I had some homework to do. I have very little understanding of how to secure an Access database, but whenever data that is considered electronic protected health information under the federal Health Insurance Portability and Accountability Act is involved, I have to make sure it is well protected.

I asked the IT person who provides Access database support how such files are secured. At first I got a blank stare, but then he responded, "We rely on file system permissions, basically." That made sense. Access output is treated like output from any other Microsoft Office program, such as Word or Excel. But I needed to know more.

Microsoft's Web site didn't give me a lot of answers, so I ended up checking the help menu from my copy of Access. I learned that there are some strategies for securing Access, but none of them is very good. Here are the techniques I found out about:

Encryption/decryption: This is the simplest method, but it only prevents the database from being opened by a tool or utility it doesn't recognize, like a word processor. It doesn't prevent anyone from opening an unsecured database using Access.

> Convenience trumps security needs in [users'] eyes.

Show or hide objects in the database window: This is just a smoke-and-mirrors tactic and can easily be circumvented.

Start-up options: The database creator can specify a start-up form that opens automatically when the database opens. Again, it's smoke and mirrors.

Passwords: You can set up a password to the database, but only one. You wouldn't be able to open the database without the password, but you would have to give everyone who needs to access the database the same password. That's not a good practice. And if you replicate databases, as users do in my agency, you can't configure it for a password-upon-open option.

User-level security: This is slightly more secure than the above methods. The database creator or administrator can specify how much access each user has to tables, queries, forms, reports and macros. Information on a user's access level is stored in a file called "workgroup information."

Preventing users from replicating the database, setting passwords or setting start-up options: User-level security must be in place for this to work, but it would mean that only administrators would have the necessary permissions to change settings. This might be one change we can make, but it isn't enough.

Securing Microsoft Visual Basic for Applications code: You can copy your code into an Access MDE file and then password-protect it.

Securing data-access pages: This applies to data that is accessed via a Web page. The Web pages are stored in the file system, so only file system security applies.

In my view, these security measures are inadequate for protecting personal health information. Our responsibilities under HIPAA are one reason we outsourced our major information systems. But, with data everywhere, the problem has come home to roost.

So, what is my strategy? Tell program staffers that they can't create Access databases? Not going there.

I have requested a list of all Access databases agencywide. I want to know who the owner of each database is, who the users are, what the purpose of each database is and whether it contains electronic protected health information. Once we know where all these little databases are, we are going to institute user-level security for all of them and apply network- and file-level permissions based on the sensitivity of each database. I also want to require that anyone extracting data from the primary information system into a local file system or database must get sign-off from IT security and his department head.

At the same time, we'll have to re-educate staffers so they understand why we are doing this. We have trained our employees on HIPAA privacy, but they don't really understand the security aspects. As I said, convenience trumps security needs in their eyes, and they are used to having information available to them on the network and having the ability to copy, change, move and e-mail it — all the things that keep a security manager awake at night.

I can't think of any other way of doing this. I'd certainly like to hear your ideas. ▸

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

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SECURITY LOG

207,000 Marines' Data Goes Missing

A portable drive containing personal information on more than 207,000 U.S. Marines is missing. The data on the drive includes names, Social Security numbers and enlistment contract details for those on active duty between January 2001 and December 2005. The drive was being used at the Naval Postgraduate School in Monterey, Calif., as part of a research project. School officials were alerted to the data loss on March 14, and the affected Marines were informed 10 days later.

IT Governance Book Download Available

The nonprofit IT Governance Institute has released new guidance on information security governance for CEOs, boards and security professionals. Available as a free download at *www.itgi.org*, the book describes 15 elements of a comprehensive security program and six benefits of good information-security governance.

McAfee Bug Patched

A vulnerability in McAfee Inc.'s e-mail filtering software could allow unwanted code to run on a computer, but a patch should fix the problem, according to a security advisory. The bug lies in McAfee's WebShield SMTP 4.5 MR1a release for Windows.

ID Theft Cost: $6.4B

According to the U.S. Department of Justice's National Crime Victimization Survey, identity theft costs U.S. citizens an estimated $6.4 billion annually. Data gathered through the survey indicates that 3% of U.S. households experienced some form of identity theft during the first half of 2004.

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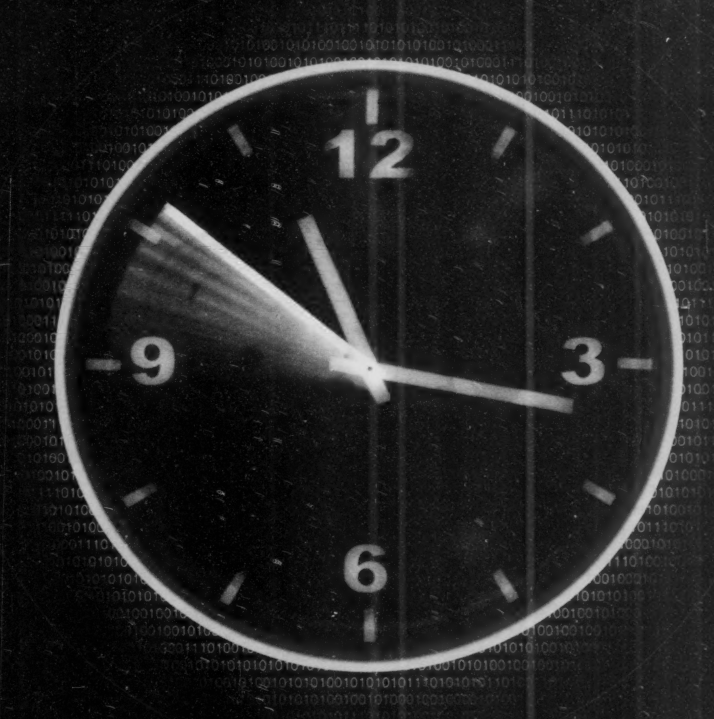

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BRIEFS

Iona Updates Its ESB

■ Iona Technologies Inc. has released the latest version of its enterprise service bus. Artix 4.0 includes BPEL-based orchestration to allow users to coordinate interactions across a distributed set of services in a heterogeneous environment, as well as support for the WS-RM reliable messaging standard, said Iona. In addition, Artix 4.0 ships with Java Message Service as a standard messaging API. It is available now for $10,000 per CPU, with additional plug-ins starting at $2,500 per CPU.

Siber Upgrades Password Manager

■ Siber Systems Inc. in Fairfax, Va., has unveiled RoboForm 6.6, password management software that's designed to protect passwords, log-in information, credit card numbers and other personal information. The software enables users to isolate and protect IDs and passwords left exposed in the AutoComplete director of Microsoft Internet Explorer. Individual users with 10 log-ins or fewer can use RoboForm for free, and a 30-day free trial is available for all others. Specific pricing information was not available.

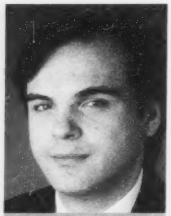
BEA Rolls Out Tools For Microsoft Apps

■ BEA Systems Inc. last week unveiled two tool sets that are designed to allow users to fold Microsoft Corp. applications into BEA portals. The AquaLogic Interaction SharePoint Console, shipping now, lets users of Microsoft Windows SharePoint Services discover and connect to those services within BEA's AquaLogic portals, the vendor said. The BEA Portal .Net Application Accelerator, scheduled to begin shipping midyear, will enable users to incorporate .Net applications into BEA's AquaLogic Interaction or WebLogic Portal frameworks. It includes new support for ASP.Net 2.0, Visual Studio 2005 and the Web Services for Remote Portlets updates protocol.

CURT A. MONASH

Six Things I Think I Think About UIs

SOFTWARE without a good user interface is — well, it's useless. Unfortunately, UIs aren't nearly as well understood as more objective "speeds and feeds" kinds of product characteristics. Products with snazzy demos often prove disappointing in real life. Meanwhile, truly good UIs are hard to explain beyond an "I know it when I see it" vagueness. But difficulty notwithstanding, UIs are too important not to write about. And so, to steal a line from sportswriter Peter King, here are six things I think I think about UIs.



CURT A. MONASH is a consultant in Acton, Mass. You can reach him at **curtmonash@monash.com.**

1. A good graphical user interface is the most important feature a product can have. In many cases, the GUI *is* the feature set, whether we're talking about operational applications, business intelligence or IT administration tools. For example, the general user analytics market is dominated by friendly BI tools. More powerful products exist, but they're mainly used by specialists, since everybody else is turned off by their clunky GUIs or command-line interfaces.

Equally dramatic is the importance of GUIs in IT administration. Check Point Software Technologies rose to dominate the firewall market because it offered a usable administrative GUI back when other products operated from command lines. Similar phenomena occurred in database administration tools, network administration and many other sectors — and would occur in more sectors if vendors would wise up. (I've been nagging the BI industry for years about developing a stronger capability to manage alerts and custom key performance indicators.)

2. Web UIs are now, finally, much superior to the client/server systems they replaced. Usually, changes in computing platforms lead to improved user interfaces. More powerful mainframes and cheaper minicomputers allowed real-time apps to replace batch systems in the 1980s. Client/server GUIs blew out character-based apps in the 1990s. For years, Web technology was a partial exception, since it actually caused a retreat in GUI flexibility. But the group of technologies collectively labeled AJAX, has finally restored client-side parity — or, if you like multimedia, even forged ahead — and Web apps now boast top-tier GUI functionality. What's more, they have major application navigation advantages, via hyperlinking and search, over anything that came before.

3. BI look and feel is on the upswing. One UI area that stagnated for years was BI. Not only was it hit by the transition from client/server to the Web, but vendors also spent years upgrading their server-side infrastructures. Now, however, we're beginning to see UI advances again. Some of them are subtle, such as the care being taken to optimize the use of screen real estate. Others are flashy, such as the long-overdue mainstreaming of some cool data-visualization technologies. Either way, UI is once again an important decision factor in selecting a BI vendor.

4. Portal technology is headed for a boom. "Portal" might seem like a somewhat passé Internet bubble buzzword, but portal technology is actually very important in at least three ways. First, it's increasingly central to application navigability. Second, it's an increasingly important BI underpinning (both SAP's and Oracle's analytics are portal-dependent). Third, it provides the integration framework to combine operational apps, analytics and collaboration technology in new ways.

5. Natural-language interfaces are advancing too slowly. Unfortunately, big vendors remain clueless about language-based UIs. Enterprise search is a fiasco. Most single-site Web searches are even worse; in almost every case, they're inferior to just Googling on "search string + site name." Serious natural-language/voice command/control and navigation should be well established by now, but in fact they're barely a blip on the radar screen, InQuira and Sybase Answers Anywhere notwithstanding.

6. Microsoft Office is a huge question mark. Microsoft Office is at a crossroads, with a mounting open-source challenge and a justified reputation for unpopular feature bloat. Microsoft's main strategy to reverse this trend is to make Office the gateway to database information, rather than just to static documents. Much of the action falls in two areas — BI and live XML.

The first fizzled query-in-Excel effort dates back to about 1993, but there's reason to think it will be different this time. The BI industry is making Excel ever more viable as a core analytics client by delivering reports straight into formula-rich Excel spreadsheets, for example. Or maybe not; after all, those same vendors are trying to undermine Excel by replacing it with more heavyweight budgeting/planning systems. And, as I've noted before, live XML is a great idea in certain niches, such as smart forms or complex contracts, but whether it will ever go mainstream remains to be seen. Interestingly, as we went to press, Microsoft announced that it plans to acquire BI vendor ProClarity. ▸

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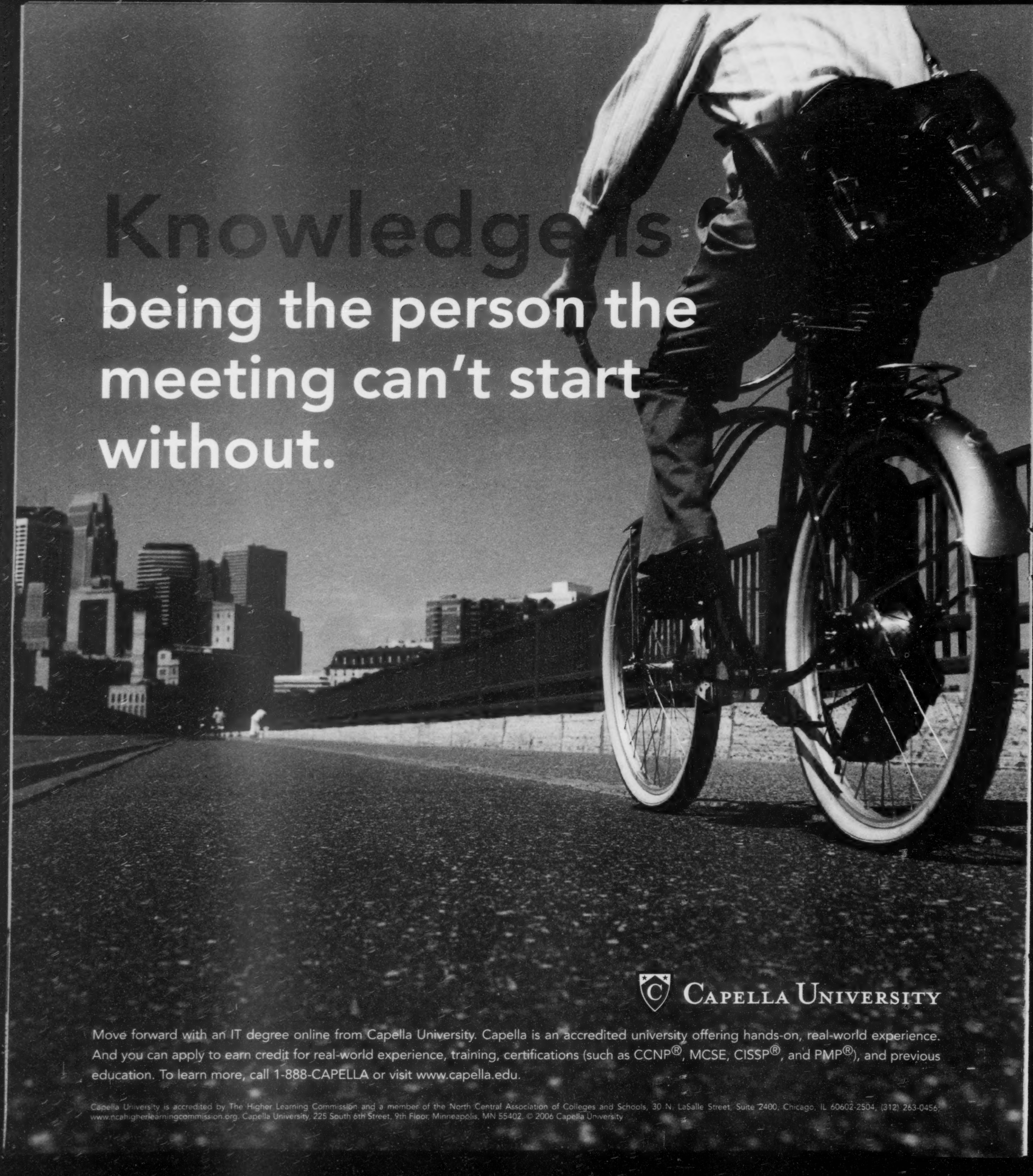
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MANAGEMENT

04.10.06

Community Colleges Get Real
In response to input from business advisers, some community colleges are working hard to keep their IT curricula up to date and enhancing internship opportunities for students. **PAGE 50**

Q&A

The Real Value in Sarbanes-Oxley
Companies are finding unexpected value in Sarbanes-Oxley compliance efforts. *Harvard Business Review* authors Stephen Wagner (far left) and Lee Dittmar explain how. **PAGE 48**

OPINION

The Pervasive Potholes Of Charge-out
Bart Perkins offers advice on how to avoid eight potential potholes that can make your route to an effective chargeback system unnecessarily bumpy. **PAGE 56**

Start with business savvy and heavy client immersion, toss in worldwide, cross-cultural teams and seat-of-the-pants execution amid crushing time and budget constraints, and you've got . . .

The NEW Project Manager

POLLY BECKER

BY MARY BRANDEL

BEING a project manager today is a lot different from playing that role a few years ago. Just ask Brenda Dunn, a project manager/business analyst at Long & Foster Real Estate Inc. in Fairfax, Va. She recently headed up a project to build a critical relocation system for the privately owned realty firm.

For several hours each day over a period of more than six months, Dunn worked intensively with users from five different departments to hash out exactly how the system would work. "I'd sit with them and get approval on the workflow, the drop-down menus, the names of fields — everything," she says. Part of Dunn's job was to corral all of the users' opinions and needs into a single, unified system and help them visualize what it would look like.

Once the requirements and screen prototypes were solidified, Dunn sent them to 12 offshore programmers in India whom she had previously met to tutor in the ways of the U.S. real estate business. Then she coordinated communication between the users and programmers, remaining mindful of the cultural and time-zone differences.

Cross-cultural teaming and heavy business immersion are just some of the new challenges that project managers like Dunn now face. Increasingly, project teams and key decision-makers are dispersed throughout the world, time frames for completion are compressed because of heightened competition, and the projects themselves are not well defined yet are tied ever more tightly to business success.

This means big changes for project managers. "The perspective, the knowledge base, the skill set and the methods traditionally employed by the project manager must change to accommodate the demands of project management in

Continued on page 46

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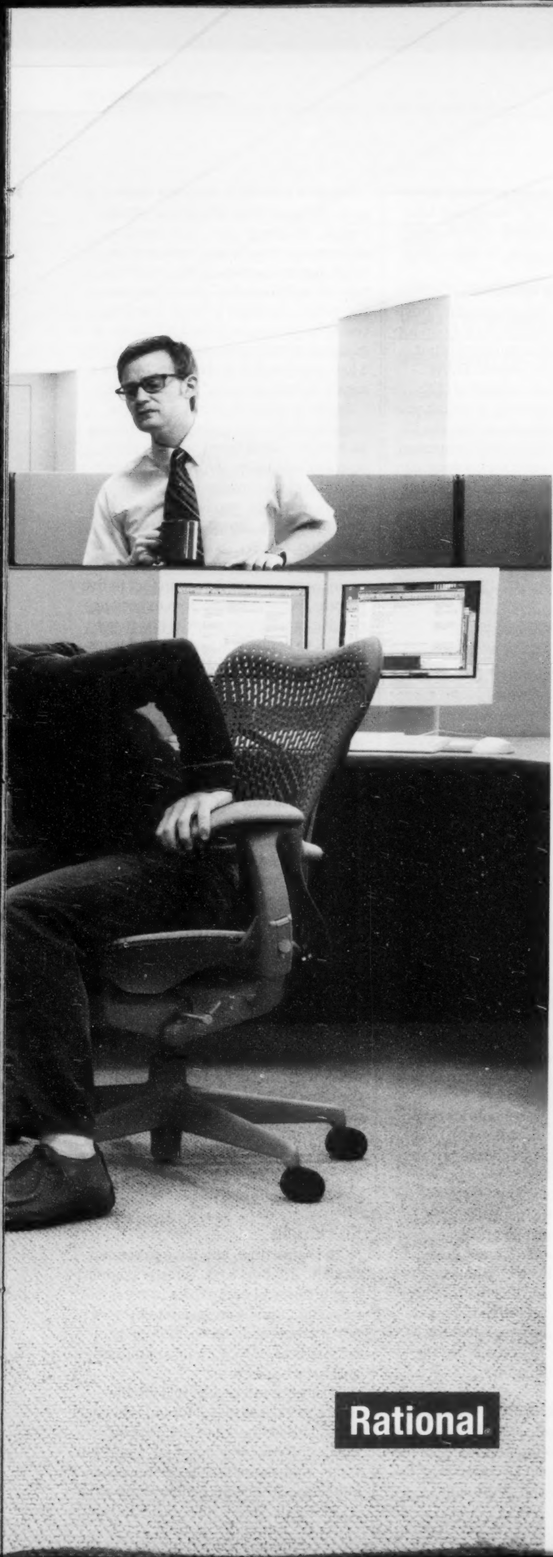

_INFRASTRUCTURE LOG

_DAY 19: The business is, uh, coming apart. I.T. isn't in sync with the suits. No one's sure what they need to do. It's totally out of control. Can things get any worse?

_DAY 20: It got worse. Gil fell into the crack. Maintenance needed a GPS device and a hundred feet of rope to rescue him.

_DAY 24: I've found a way to take back control: IBM Rational. Now we have a platform that lets us govern the entire software development process and align it with our business goals. Everyone knows their jobs, everyone works together. We can manage all our offices' development teams and ensure our software's in compliance. It'll even help implement a service-oriented architecture which will make us more flexible. Can you say win-win?

_Everyone's glad the crack is gone. Gil says his nightmares about "the dark place" are practically over.

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FIND THE POWER

PERHAPS THE MOST IMPORTANT and difficult task for project managers today is one that has always been a challenge: finding a way to gain more influence over the people you're leading but ultimately don't have authority over.

"It's an ongoing problem," says Peter Baker, vice president of information systems and technology at Emcor Facilities Services. "I'm a firm believer that the project manager needs the authority to make decisions without going to higher-ups once the project has been authorized."

But that doesn't always happen. In fact, in the vast majority of cases, project managers don't even report progress directly to the project sponsor but work through an intermediary, says Gopal Kapur, president of the Center for Project Management. The problem has become more acute with globalization. "Customers can be worldwide, in different time zones and speaking different languages," says Kapur. "Project managers are the key to managing all that and so need much more authority than they're ever given."

One solution is to establish a direct line to the CIO to intervene when things are going awry, but that's not particularly effective, says Kapur. "Having authority is not [saying], 'When my customers don't pay attention to me, I'll call my boss,' " he explains.

What's more radical is for the CIO or the sponsor to demonstrably hand over the reins to the project manager by clarifying his authority in the project charter and announcing it at the kickoff meeting. Then, if high-level stakeholders are constantly arriving late for project meetings, for example, the project manager can take charge, lock the door and effectively "close" the meeting five minutes after start time, he says. That will get their attention.

– MARY BRANDEL

Continued from page 43

2006," says Bryan Beverly, a software architect and team leader at BAE Systems Information Technology, a government IT contractor in McLean, Va.

Broaden Your View

A key change, Beverly says, is that the perspective of project managers has become as decentralized as the technology they manage. "You need to look beyond your immediate circle and appreciate the dynamics of a broader community of interest and practice," he says. That includes understanding the business goals and pressures that motivate both your project sponsor and your users.

"When you're dealing with a Stanford MBA who's bright and aggressive, if you're not on top of your game discussing project scope and budget changes, you're toast," says Virginia Robbins, chief operating officer at North Bay Bancorp, a community bank holding company in Napa, Calif. "Project managers today have to be absolutely confident that they understand both the technology and the business and can translate between the two," adds Robbins, a *Computerworld* columnist who spent years as an IT project manager.

To achieve that confidence, ask questions relentlessly until you understand precisely the terminology, the issues and the context within which the business users operate, she says.

Communicate in 3-D

Because the people you're working with and want to learn from are no longer always right down the hall — or even on the same continent — project managers have to become great communicators. "The virtualization of IT makes it tougher to communicate," says Peter Baker, vice president of information systems and technology at Emcor Facilities Services Inc., a subsidiary of Emcor Group Inc. in Arlington, Va. As a result, he says, project managers "need to communicate up, down, to the left and right."

That means using tools and adopting practices that support collaboration. Those practices might include storing all documentation in one virtual place where everyone on the team, no matter what his geographic location, can access them. But it also means understanding the importance of old-fashioned, face-to-face meetings.

"You can't rely on tools to make up for a geographic situation," warns Bill Hagerup, senior instructor at Ouellette & Associates, an IT professional development firm in Bedford, N.H. Overcoming cultural gaps means meeting in person with your team members and key stakeholders at least once and as early in the project as possible, he says.

Become Worldly-wise

With companies globalizing their business reach, it's important to stay on top of the customs and cultures of other nations. But you also should know about the worldwide economy, U.S. policies toward countries in which you do business, differences among the IT standards supported by different countries and whether your technology can interact with those standards, Beverly says. "If you're playing outside the U.S., you have to be aware of the U.S. position toward the partners you're doing business with," he says.

KNOW YOUR USERS

GOPAL KAPUR, president of the Center for Project Management, says these steps can help you better understand your business and your users:

- Don't stay steeped in IT; read articles and books about the industry you're in.
- Attend customer meetings and non-IT-industry conferences.
- Spend time with users in your company. "When was the last time you were actually on the loading dock [to see] how people react when the address label falls off?" Kapur says.

Being aware of global politics can also enhance relationships with overseas team members. "Technology people might think international politics never come into play, but there are a lot of things underlying people's loyalties and beliefs that must be understood and managed," says Gopal Kapur, president of the Center for Project Management in San Ramon, Calif. "It's the rare project manager who takes the time to do that. Most wouldn't even know the prime minister of the country of the person they're talking to."

Be a Political Operative

Politics within your organization count, too. And today, being politically savvy is even more crucial as companies' tolerance for IT failures diminishes.

"Project managers are easy scapegoats for problems within the organization," Hagerup says. "You need to understand people and their motivations, figure out who to ally with and who to watch out for." Even keeping the project sponsor actively involved once the project is kicked off can be a game of relationship management. "It's a key relationship to develop, but it's easier said than done," he points out.

Political savvy requires good relationship skills, but it also means taking an honest look at how your company operates and using the system to your advantage, says Johanna Rothman, a project manager who is president of Rothman Consulting Group Inc. in Arlington, Mass.

For instance, if your business needs require you to complete a project in five months, but you know from experience that it can take two months just to get the OK to begin, you need to find ways to work around the edges to get a head start. You might begin by prototyping, for example. "It's a politically correct way of getting management in gear without saying, 'We take too long to start projects,' " Rothman says.

Assert Yourself

With heightened pressure to succeed, you need to be more outspoken about what you need to get the job done. For example, if you work on global projects, you can't expect your travel budget to magically increase so you can meet your project counterparts face to face. But you have to make it happen. Even if your company has placed a moratorium on travel, you can't take no for an answer, Hagerup says.

The same goes for dealing with business constituents. Five years ago, business owners were more apt to hand over the reins when it came to choosing technology for a system. But today, "you're dealing with business people with very strong opinions on how things should be run, so you need to actively own the project," Robbins says.

Be Flexible

At the same time, you have to remain flexible, Robbins says. Intense competition is pushing companies to try business and technology gambits they've never attempted before, making projects increasingly complex, nebulous and speed-driven.

That pressure results in a double threat, says Rothman. Not only do you get tight deadlines, but the projects that come your way may arrive without clear requirements. "The more speed you need, the less you know about what you have to do," she says.

> **When you're dealing with a Stanford MBA who's bright and aggressive, if you're not on top of your game discussing project scope and budget changes, you're toast.**
>
> **VIRGINIA ROBBINS,** CHIEF OPERATING OFFICER, NORTH BAY BANCORP

At some of Rothman's client sites, the people who fund the projects provide "tight or impossible deadlines," she says. "And they provide ambiguous requirements, when they provide requirements."

This means project managers have to be more adaptable than ever before. For example, they may not be able to employ traditional methodologies, like a phase-gate life cycle, because those don't provide a completed product as early, Rothman says.

Also, there's no guarantee you won't have to change gears midway through. "If you're a traditional project manager who thinks you can line everything up and execute on it, that doesn't work anymore," Rothman says. "There are fewer and fewer project managers who say, 'Let's lock down the project requirements early,' because they know they can't."

So, if you're in that situation, instead of trying to define all the requirements upfront — which could take you six months or more — Rothman suggests prototyping a few features in a month's time to try out the architecture you think would work and get feedback.

"I can't remember the last time I worked on a project where we had complete and unambiguous requirements to start," she says. "Yet so many project managers keep the requirements phase going forever, instead of showing people something about what the current requirements represent."

Most important, you need an arsenal of techniques that you can apply to all stages of development — from iterative planning and developing and applying good metrics to fast prototyping and code reviews, she says.

Robbins agrees. "You can bring structure and uniformity, but you can't do it rigidly," she says.

Sharpen Your Social Skills

Project management's roots in the construction industry may account for its traditionally heavy emphasis on measurement and scheduling, but the focus among the new generation of project managers who have been certified by Project Management Institute Inc. is on soft skills, says Emcor's Baker.

That means that understanding employee motivation, organizational dynamics and team behavior patterns has become as important to project managers as mastering critical path analysis, PERT charts and work-breakdown structures, says Baker. "We're slowly morphing to the point that softer skills are as important as the hard skills," he says.

So, how do you develop all these new skills? Project management training is certainly useful, but ultimately, experience is the best teacher. "I don't think there's a certification program that can substitute for lessons learned in life," Hagerup says. "There's a need for highly seasoned project managers on these strategic projects in organizations."

Start now to make every project count as a step toward achieving that seasoned expertise. ▶

Brandel is a Computerworld *contributing writer in Newton, Mass. Contact her at marybrandel@verizon.net.*

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The Real Value in Sarbanes-Oxley

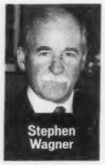
Companies are finding unexpected business and IT benefits in compliance

Q&A

Fear can be a powerful generator of upstanding conduct, say **Stephen Wagner** *and* **Lee Dittmar**. *But business runs on discovering and creating value. In this month's* Harvard Business Review, *the authors discuss how smart companies are finding unexpected value in Sarbanes-Oxley Act compliance. Wagner, who is the managing partner of the U.S. Center for Corporate Governance at Deloitte & Touche LLP, and Dittmar, who leads the enterprise governance consulting practice at Deloitte Consulting LLP, talked with* Computerworld's *Kathleen Melymuka about how companies can use compliance to their advantage. (For an expanded version of this interview, see* Computerworld.com.*)*

What were some of the big control gaps that early Sarbanes-Oxley efforts uncovered?

WAGNER: We found in many instances that control documentation was way behind or didn't exist. A second issue was the tone at the top: the communication out of the boardroom and the CEO suite that sets the stage for the organization, including how it deals with ethical standards. We found that there was often very little communication across organizations around the importance of maintaining good controls. In some cases, we found duplication of control activities that created inefficiency. We ran into unnecessary complexity in the extreme. In the IT area, there was duplication of systems. One division of a company had 200 financial accounting systems.



Stephen Wagner

What's a Control?

In Sarbanes-Oxley, a control is a practice established under management oversight to help ensure that business processes are carried out consistently and safely, with the proper authorization and in the manner prescribed.

Controls fall into two broad categories:

Preventive controls should eliminate lapses. **Example:** Segregation of duties in accounting so one person approves an invoice, another prepares the payment and a third signs the check.

Detective controls should identify errors and irregularities that have already occurred. **Example:** Monthly reconciliation of cash accounts.

– ADAPTED FROM *HARVARD BUSINESS REVIEW*

DITTMAR: And organizations didn't know what their control programs consisted of. They knew they had them, but as one executive told me, it was "kind of tribal." There was no consistency in how they did it. We also found uncontrolled access to systems and challenges around security and change management.

How have Sarbanes-Oxley compliance efforts yielded dividends at some companies?

WAGNER: We look at the documentation of systems and policies. In its absence, it's hard to know what's going on and hard for employees to know what their responsibilities are. At many companies, the documentation — job descriptions, responsibilities — wasn't up to date, so it was hard to hold people accountable for specific standards of performance. By getting that up to date, companies were able to execute business activities better, because while documentation serves a purpose in control, its primary purpose is as a written guide for people to follow. Without it, people are ad-libbing.

DITTMAR: Documentation requires a firm to take a hard look at its end-to-end data, processes and systems. People get in silos and they don't know what happens in the next step. Sarbanes-Oxley forced companies to look at business processes and say, "I wonder why I do that."

You mention a new mind-set among boards of directors, particularly audit committees.

WAGNER: Previously, they were paying attention, but they were not nearly as engaged as they are today. They ask different questions and bring a higher level of expertise than they used to. They ask how things will be resolved. They want to understand all manner of material risk and what remedial actions are going to be undertaken. There's a keener interest in IT activity, which they shied away from in the past.

You write that companies are beginning to leverage Sarbanes-Oxley activities to facilitate other compliance tasks.

DITTMAR: Compliance initiatives are silos unto themselves, but people are now realizing that there's some commonality of good compliance programs regardless of domain. CIOs would love to have a comprehensive view of how IT can better support governance, risk management and compliance. There was no one place to go but to the Open Compliance and Ethics Group. [OCEG.org] is creating a source for people to get basic information on leading practices to deal with this. Companies are just scratching the surface now about how to bring a more comprehensive approach so compliance becomes a byproduct of what they do.

Lee Dittmar

How did compliance efforts help Manpower standardize its software development?

WAGNER: A company like Manpower, with an enormous payroll, is vulnerable. Even the smallest of errors can have a dramatic impact on the financial statement. But every piece of software at Manpower was being dealt with in a unique fashion. By deploying a consistent way of addressing change management activity, they gained assurance they won't have problems because something went wrong without a standardized process.

DITTMAR: Manpower is the example, but you can plug in any large company name. Some of the best-known companies built on technology have this challenge.

How can Sarbanes-Oxley compliance help reduce post-merger and -aquisition complexity?

WAGNER: Over 10 years Iron Mountain had acquired more than 150 companies. It had to digest 150-plus separate systems. By doing that, you inherit a variety of different platforms that aren't necessarily complementary, so there's a high risk of problems and high costs of operating separate systems. Sarbanes-Oxley has served as a catalyst to enable many companies to address this problem.

How has Sarbanes-Oxley helped companies better understand the risks and complexity that arise from partnerships?

WAGNER: Companies may rely on an outsourced service provider to manage payroll, warehousing or other critical activities, and those third parties are also providing financial information. A company's internal controls extend to those third parties; they have a responsibility not only to evaluate the controls under their own roof but also to assess the controls of that third party. Sarbanes-Oxley shined a bright light on these relationships and found [that] many companies misunderstood the extent to which they are responsible for these extended controls.

DITTMAR: In IT outsourcing, the need for controls is a game changer. It has to be explicitly addressed in service-level agreements. It's leading to pressure, because if you ask an outsourcer to do more, they want to charge you for it. The book is far from closed on this.

How has Sarbanes-Oxley compliance led to processes to minimize human error?

WAGNER: In most companies, the preponderance of controls is performed manually. If you are able to take the human factor out, the risk of problems with controls greatly decreases. Automated controls are not subject to fatigue, absenteeism or distraction. But opportunities exist in many ERP systems for many automated controls that were never activated. Many organizations are having a second look at that and looking at the whole internal control program to see where they can automate.

A lot of these Sarbanes-Oxley benefits are the kinds of things that CIOs have been advocating for years, with mixed results.

DITTMAR: I agree. CIOs say, "Things would be better if we standardized on a particular application," and the business units say, "Sure, as long as everybody moves to mine." So this is an opportunity for CIOs to step up and to get CXO stakeholders to understand all the elements — people, process and technology. The president of a very large technology company recently told me that compliance will be the single largest driver of IT priorities over the next decade. CIOs have a very important role to play. Companies can't do this efficiently and effectively without properly leveraging technology. It's not enough to just write good policies and processes; you have to have technology to support it or it won't be sustainable. ▸

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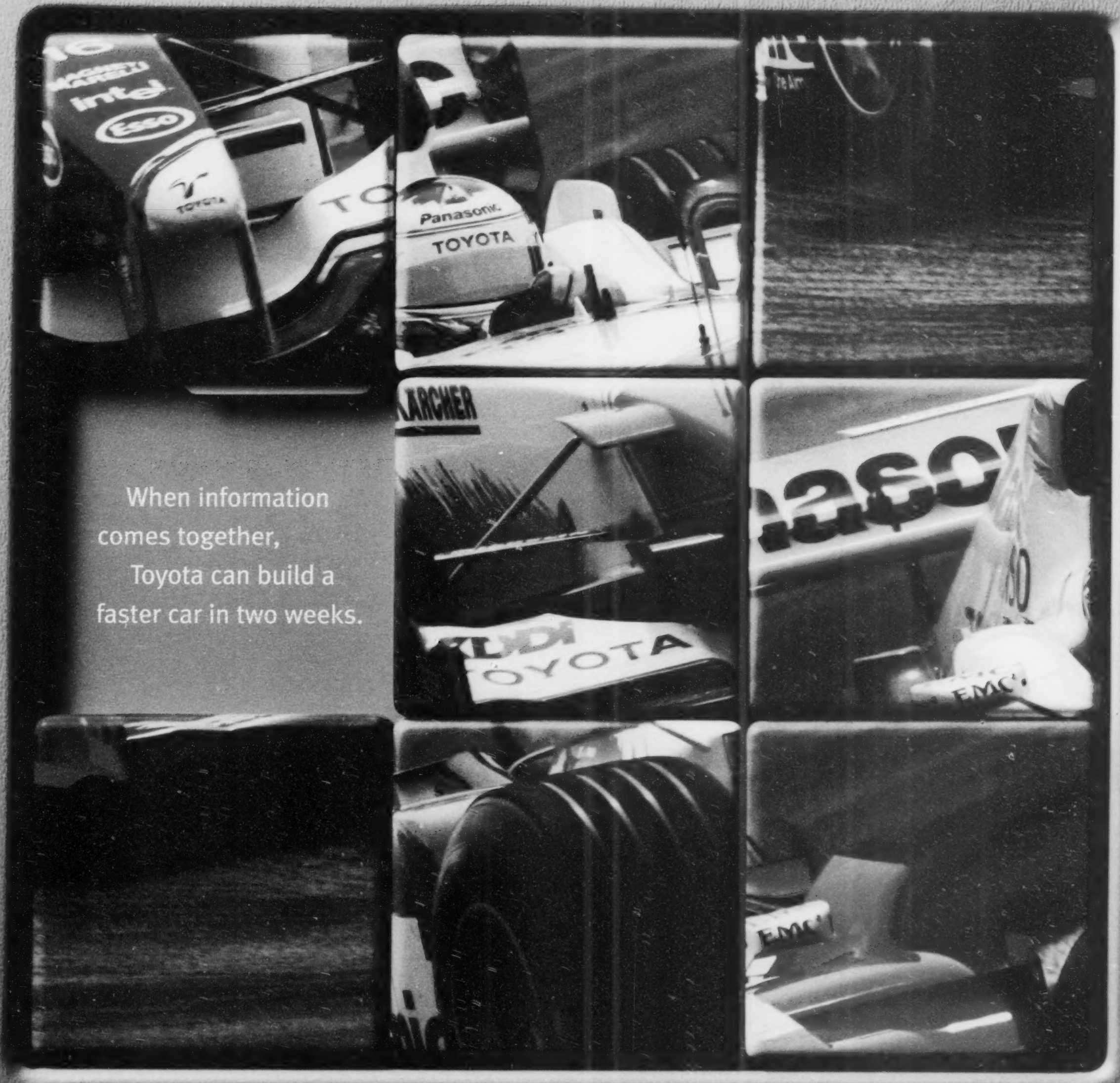

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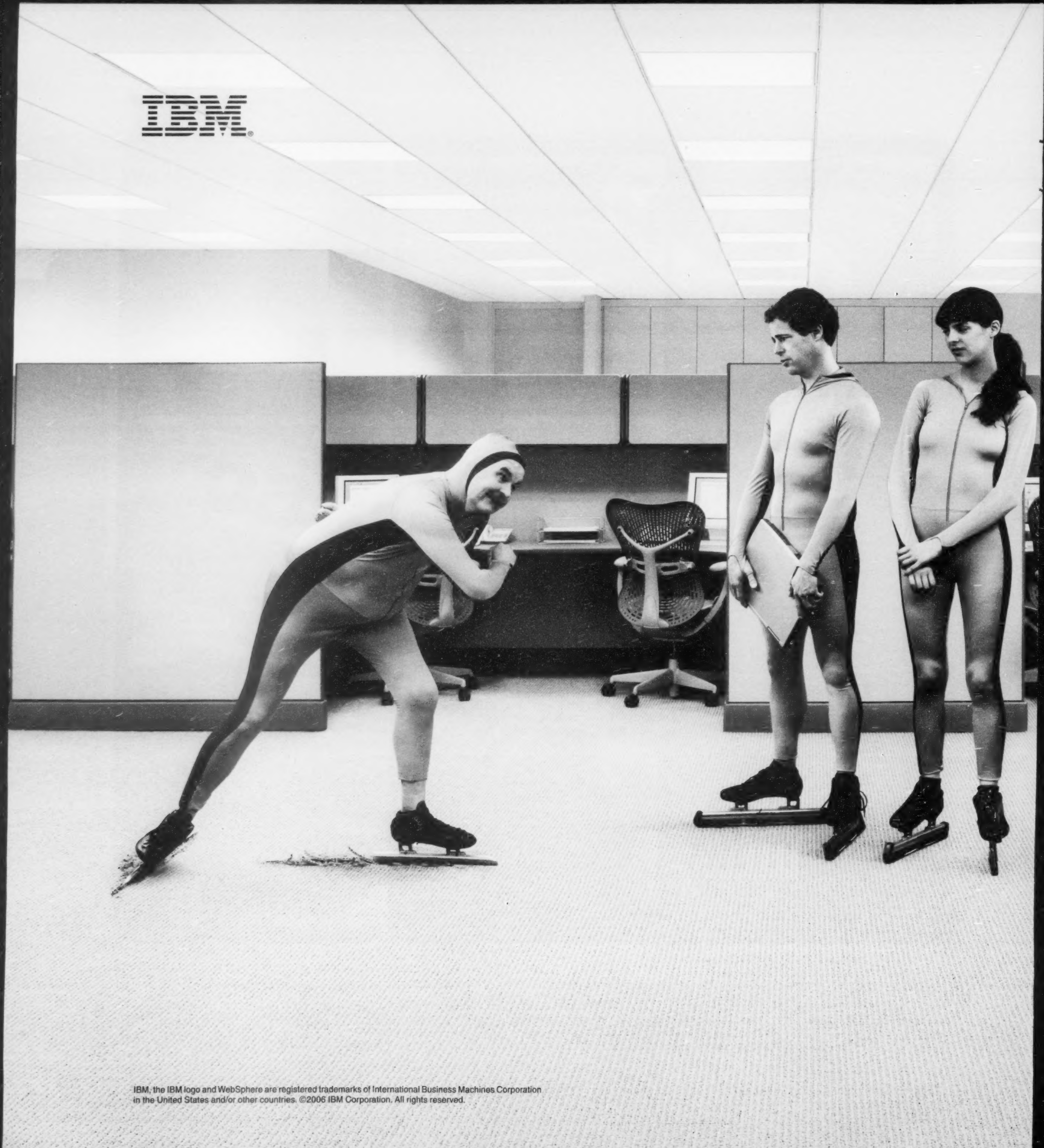

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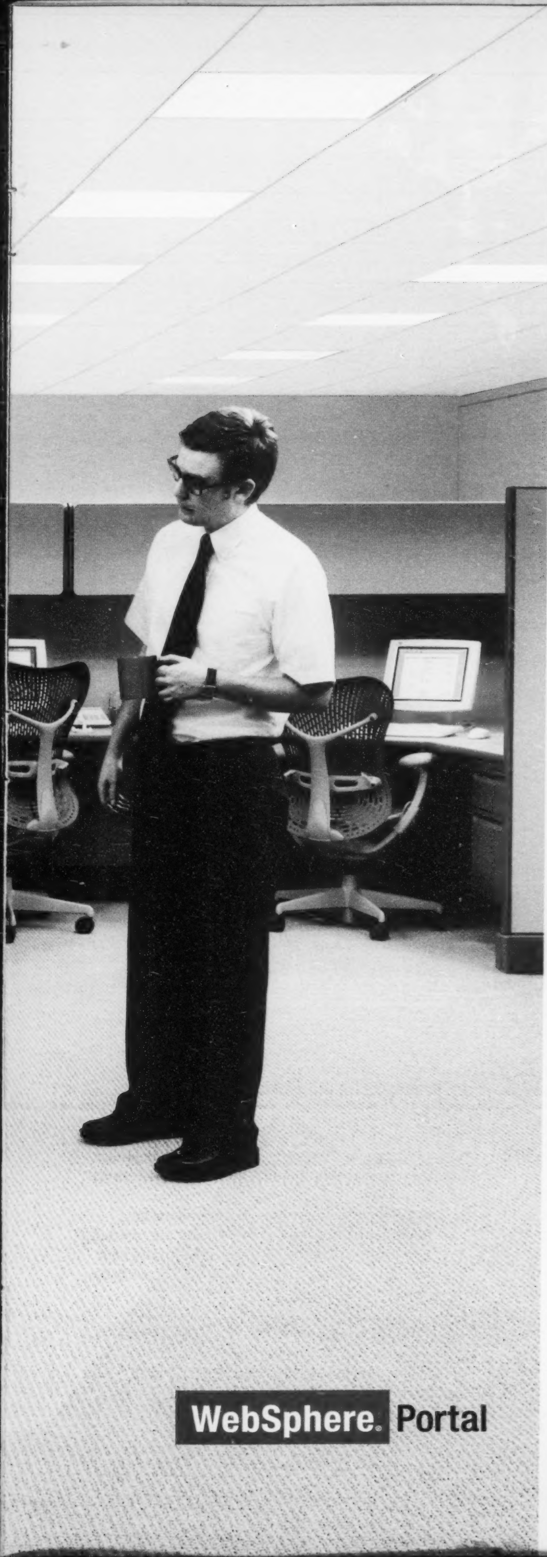

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COMMUNITY COLLEGES

Get REAL

After years of mixed reviews, some two-year IT programs are getting a reality check through strong ties to area businesses.

BY DAVID RATHS

BRIAN SMALE

ALAN CARTER (right) worked with Boeing's DON ALISHIO and other IT pros to revamp the curriculum at Green River Community College.

ALAN CARTER faced a daunting challenge when he took over the network technology program at Green River Community College early last year. The Auburn, Wash.-based school had not updated to Windows Server 2003, and its curriculum was outdated. Enrollment in the program had shrunk to only four students.

"It was in disarray, and there was a huge disconnect" between the school's program and local employers, says Carter, an IT instructor. "And I think the problem was more on our side than on the employers' side."

As he revamped the program, Carter sought help from local IT hiring executives and found them very receptive. "Some are incredibly busy, but they said, 'Yeah, I'll help. I need to hire those people,' " he says.

The relationship between IT employers and community colleges is sometimes a rocky one. Squeezed between private technical schools and four-year universities, many two-year programs have seen enrollment drop sharply since 2000.

Serious communication gaps hamper cooperation between industry and many community college IT programs, according to an ongoing two-year study by the National Workforce Center for Emerging Technologies (NWCET). The study, called "Strengthening Connections," seeks to bridge those gaps by detailing employer perceptions of community college IT graduates and identifying exemplary education-employer partnerships.

In general, employers perceive community college graduates as technically skilled but not well-rounded enough, says Sandra Mikolaski, the NWCET's associate director. "They don't have the life experiences or the problem-solving skills employers are looking for," she says. Employers are also frustrated with community college IT training programs because they seem so bureaucratic. "[Employers] don't understand why change takes so much longer than in business, and they start to think the colleges aren't listening," Mikolaski says.

But some community colleges are listening, and in response to advisers' input, they are overhauling their career-related curricula, developing new courses more quickly and enhancing internship opportunities for students.

Green River Starts Over

After Carter began redesigning Green River's IT program from scratch, he held a daylong session with IT professionals in Auburn. They informed Carter that there was a shortage of skills in security and networking infrastructure. They also told him to put less emphasis on programming and that they needed IT generalists, not just technicians trained

Continued on page 54

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Continued from page 52

only in Microsoft Corp. technology.

After listing critical areas of knowledge for job categories that were in demand, such as network administration and security analysis, the team mapped Green River courses that could help prepare students for the job-category tasks. They developed a grid of eight competencies: business, communication, analysis, teamwork, operating system management, applications management, security and research. For each competency, they sought to determine whether the learning should take place in the classroom or through internships.

"It was also hammered home to me that we need to focus on soft skills," Carter says, so besides courses in networking, programming, databases and operating systems, students are now required to take classes in public speaking, customer service, project management and user support.

"I told Alan we can't afford to hire people who have only technical skills," says Don Alishio, a network engineering manager at The Boeing Co. who was part of the group. "They have to have business and planning skills and financial awareness," he says, adding that student interns who appear hungry to learn stand out to employers.

The session helped the college redesign its networking associate's degree and create specialized certificate programs. Alishio says he was impressed with the turnaround time on the new curriculum. "We held those meetings in March, and they were offering the new courses by September," he says. "That's fast. And the process of change in curriculum previously had been very slow."

Breaking Up at Bunker Hill

Two years ago, administrators at Bunker Hill Community College in Boston made a radical change. To focus on emerging technologies, they split off the school's business- and industry-focused IT program from the traditional computer IT program. "I think we're the first community college in the country to divide its IT program in two," says Andrea Lyons, chairwoman of the IT for Business and Industry program. "We realized we had to respond more quickly to the needs of business. We had to be able to add and drop classes and even whole programs much faster."

To get that rapid turnaround, Lyons says, each area of study needed its own industry advisory board, instead of having just one board for the whole IT department, as is customary. "Our networking program was not going to get reactions on what is cutting-edge from a broad-ranging board that included programming, database and Web development people," she says.

The new advisory boards can give focused advice. For example, when Lyons recently questioned whether to drop a NetWare course in favor of one on Linux, she had access to the views of six executives in local networking companies. Lyons, who has been teaching at Bunker Hill for nine years, says she depends on these newly formed boards to keep her up to date.

"Security and IP communications have really come to the forefront in networking recently," says Dave Hart, executive vice president and chief technology officer at Networked Information Systems LLC in Woburn, Mass., and one of Lyons' industry advisers.

Keeping Faculty UP TO DATE

In 2005, the National Workforce Center for Emerging Technologies held four regional focus groups to gather input from IT programs at two-year institutions and their industry partners. When asked how community college faculty could stay current on trends in the field, forum participants had the following suggestions:

1. **Provide college faculty members with job-shadowing and mentoring relationships with industry professionals.**
2. **Fund annual professional development activities for faculty members.**
3. **Deal with the fact that some tenured faculty members refuse to stay current.**
4. **Offer faculty members the opportunity to earn vendor certifications.**
5. **Offer faculty members return-to-industry opportunities with employers.**

For more information on the study, see **www.nwcet.org/projects/strengthen.asp**

"How are you going to be aware of that if you've been out of the workforce nine years and spend all day teaching? That's why I think it's a brilliant move on her part to reach out to the local business community. After all, we're her customers. I'm relying on those students to help make my company better."

Another of Lyons' advisers is former student Dawn Maxey, who graduated from the networking program in 2000 and is now a network technician at Boston law firm Brown Rudnick Berlack Israels LLP. Maxey says that as a student, she found the curriculum at Bunker Hill relevant enough, but an internship she did was even more important. "Getting the hands-on experience is crucial," she says, adding that the internship and her job in Bunker Hill's computer lab seemed to weigh more heavily with employers than her technical skills.

Lyons' focus now is on getting Hart, Maxey and other advisers to help bolster the internship program, which she says should provide the combination of coursework and training employers tell her they're looking for.

A robust internship program is one of the most valuable aspects of a community college education, but building such a program is one of the toughest assignments facing people in Lyons' position, says the NWCET's Mikolaski. "Setting them up is a massive task," she says, "so it requires the involvement of CEOs, college presidents and deans to commit the resources to sustain them."

Keeping community college courses relevant is "always going to be a challenge because the technology changes so rapidly that it's tough to anticipate employers' needs," says Arlene Peterson, a senior data network analyst at Northwest Airlines Corp. in Eagan, Minn.

Northwest doesn't have much turnover in IT and doesn't hire many community college graduates, yet it considers Inver Hills Community College a key training partner for its internal IT staff. The airline is one of eight companies that have joined with the Inver Grove Heights, Minn.-based college to identify common needs in IT training and seek state grant funding so that Inver Hills can purchase equipment and develop curricula.

The terms of the state funding require that employers monitor the progress of training and also contribute cash or in-kind donations to help pay for it. In recent months, Northwest employees have attended Inver Hills courses on subjects such as security, telephony and wireless technologies. Every four months during the grant cycle, the state requires employers to fill out forms on the shortcomings and strengths of the training.

Peterson, who leads a workgroup of nine employees supporting IP routers and switches at Northwest, says the college has been very responsive to suggestions. "Also, the employees have found it beneficial," she says. "They are developing a whole new skill set, and they are skills Northwest is going to need."

Establishing a Feedback Loop

The grant-writing process has created a feedback loop in which employers can be in regular contact, not only about how the training is going, but also about upcoming business needs, says Jim McCormick, manager of IT training programs at Inver Hills. Based on strong employer interest, his next grant proposal involves developing a comprehensive IP telephony program.

McCormick also solicits input on upcoming courses' content. "We were considering offering two Cisco IP telephony classes, but one employer asked about including Avaya or Nortel equipment, so we have to think about adding those," he says. "They also suggested IP video training."

McCormick says that while it's crucial to upgrade the skills of people in the workforce, it's also important for students who don't have jobs yet to hear directly from employers. "We do regular hiring fairs," he says, "and representatives from six IT organizations make presentations to students about what kinds of skills they are currently looking for."

Another feedback mechanism comes from the students themselves. Brian Cullen, another senior network analyst at Northwest, has taken classes at Inver Hills in Cisco and radio frequency technologies. "I'm always looking for ways to upgrade my skill levels," he says. "This gave me a chance to see some protocols I didn't work with on a day-to-day basis to see if they might be useful someday."

Cullen was pleased with the quality of the curriculum and instruction but notes that it's crucial that colleges stay current on the technologies employers are using. "I think Inver Hills gets that feedback," he says, "both from the employees of the companies in the grant program and from companies coming to campus to interview prospective students." ▸

Raths is a freelance business writer in Portland, Maine.

Congratulations Award Recipients!

Computerworld's Storage Networking World, in conjunction with SNIA, proudly announced the results of the "Best Practices in Storage Networking" Awards Program. This program honors IT users "Best Practice" case studies selected from a field of qualified finalist.

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NBA Entertainment - Secaucus, New Jersey
The Computational and Systems Biology Initiative (CSBi) at (MIT) - Cambridge, Massachusetts

Industry Regulation Compliance and Corporate Governance

- **Commerce Bancorp, Inc., Cherry Hill, New Jersey**
- **Kindred Healthcare - Louisville, Kentucky**

Finalists: Chittenden Corporation - Burlington, Vermont
IPR International, LLC - Conshohocken, Pennsylvania
Webcor Builders - San Mateo, California

Innovation and Promise

- **Arizona Public Service Company (APS) - Phoenix, Arizona**
- **ShopKo, Green Bay, Wisconsin**

Finalists: E! Networks - Los Angeles, California
Foster and Partners - London, England
State Street Global Advisors (SSgA) - Boston, Massachusetts

Storage Reliability and Data Recovery

- **Defense Acquisition University, Fort Belvoir, Virginia**
- **University of Minnesota - Minneapolis, Minnesota**

Finalists: Burlington Coat Factory Warehouse Corporation - Burlington, New Jersey
Fulcrum Pharma LLC - Hemel Hempstead, Hertfordshire
LifeLink Foundation - Tampa, Florida

Systems Implementation

- **Children's Hospital of Philadelphia - Philadelphia, Pennsylvania**
- **Statistics Canada, Ottawa, Ontario**

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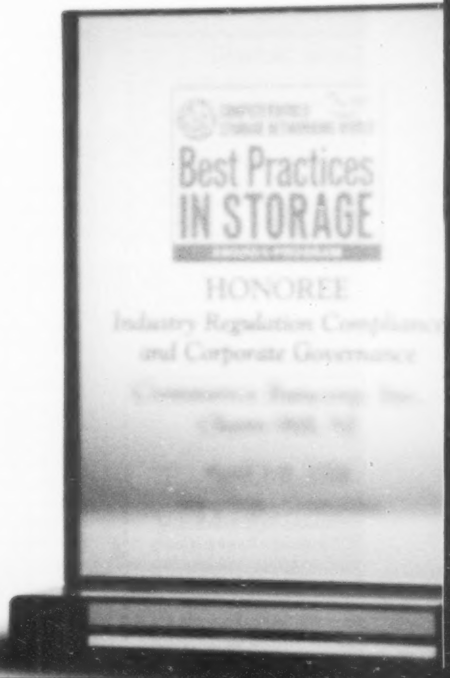

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Topics at the Fourth Annual Desktop Linux Summit include how to end the Linux software drought, personal disaster recovery systems, open-source software economics, Linux for the business user and how corporate America will adopt Linux.
www.desktoplinuxsummit.com

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www.lighthouseseminars.com

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May 7-10, Cambridge, Mass.
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www.cutter.com

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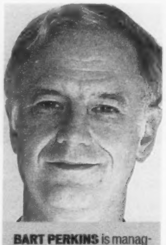
www.globalintegrationsummit.com

BART PERKINS

The Pervasive Potholes Of Charge-out

IN AN EFFORT to allocate limited IT resources effectively across the organization, many corporations are considering establishing charge-out systems. They believe charge-out — also known as chargeback — will make consumers of IT services better stewards of company resources and allow the organization to better align IT usage with corporate priorities. (To learn about the advantages and disadvantages of these systems, see "Charge-out: How to Do It Right," Feb. 13.)



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Will your charge-out system be viewed as fair, rational and understandable, or will it be received with general fear and loathing? The perceived fairness of IT pricing depends on choosing a pricing structure that accurately reflects actual consumption.

Don't use simplistic measures such as departmental head count. That often results in unfair charges. For example, problems can occur if one department invests in a new system that reduces its head count (thereby lowering its IT charges) but actually increases its IT consumption. Don't roll charges up into an "easy to understand" number. That's often both confusing and unfair. Most important, avoid pricing anomalies. Effective charge-out systems must produce the same charge for the same service across all departments.

Before implementing charge-out, you need to address these potential potholes:

Purchases. Are users free to buy IT products and services outside approved channels? Other departments may argue that if they have to pay for a service, they should be able to buy it at the lowest price. IT argues that introducing unsupported suppliers into the organization makes it more difficult (and costly) to manage the overall infrastructure. Unfortunately, these arguments often involve unfair apples-to-oranges comparisons. For example, after one company established laptop standards, users complained that CompUSA sold the same product for less. However, the CompUSA product had a shorter warranty, a different operating system (XP Home Edition) and weaker virus protection.

Provider. Can IT sell services outside? If users are free to buy outside services, IT may propose selling its services to other companies. In practice, selling IT services externally is often a mistake, since it can easily distract IT managers from their own company's needs. In addition, to provide external services, IT needs more internal discipline than IT shops at most large companies have.

Pricing. Most charge-out systems charge for actual costs incurred, but you can design pricing mechanisms to influence behavior. For example, more sophisticated charge-out systems offer significant discounts for off-peak use. New IT services can be priced as loss leaders to encourage experimentation, while nonstandard services (tape mounts or unsupported handhelds, for example) can be charged above actual cost.

Terms. Are your terms helpful or confusing? Express charges in user terms, such as monthly desktop cost, cost per invoice or monthly cost per gigabyte stored, rather than in technical terms. In addition, pick units that help departments understand their usage and indicate how they can control their IT costs (by reducing overly complex queries, eliminating unused mailboxes or purging files, for example).

Partial charge-out. Are costs fully or partially recovered? John Chambers, Cisco's CEO, views infrastructure as part of the cost of doing business. Cisco's IT department charges other departments only for services beyond their basic "foundation infrastructure." Unfortunately, this approach often deteriorates into political debates over exactly what is included in the foundation infrastructure.

Periodic technology refresh. How is technology refresh funded? Hotels, restaurants and retailers know they must regularly paint, replace carpeting and update their properties; they budget and plan accordingly. Most corporations understand this concept intellectually, but quarterly earnings pressure often makes them reluctant to actually fund necessary IT technology refreshes.

Project management costs. Who pays when user departments hire outsourcers? Often, outsourcers must interact with existing IT systems, but no budget is provided for project management. As a result, the outside project is often inadequately managed, or project management costs are buried in other budgets (thereby defeating the purpose of charge-out).

Politics. Does the charge-out system recover (collect) enough money by the end of the year? Some companies insist that IT recover enough money to offset all costs. CIOs who are penalized for under-recovering get very good at setting rates so that IT can collect more than is needed and then give end-of-year rebates. Their user departments get used to receiving this "free" (unbudgeted) money. Anticipating gratitude, new or politically unaware CIOs often lower the IT rates but instead suffer political fallout for eliminating expected annual refunds.

Use charge-out to leverage your all-too-scarce IT resources to produce the highest return for your organization. Just beware of the potholes, and design effective solutions to get around them. ▸

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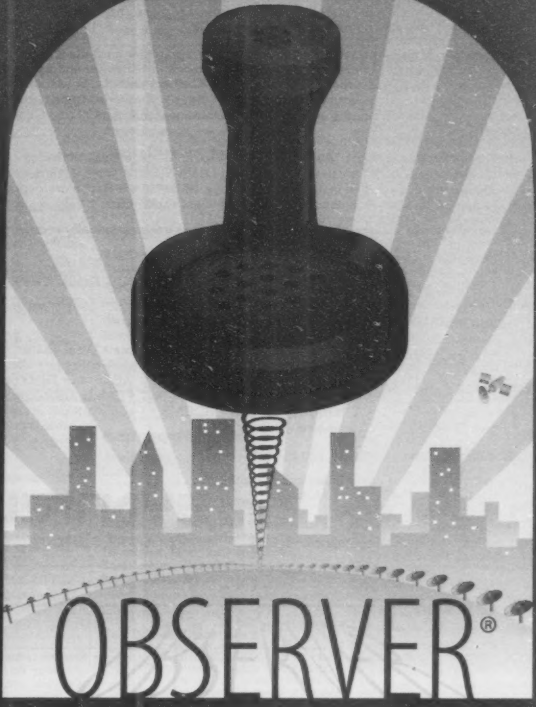

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ABN AMRO BANK NV 6
ACCENTURE LTD. 6, 16
ALTARA LLC 20
AMERICA FIRST CREDIT UNION 21
APPLE COMPUTER INC. 1, 24, 62
APPLIED VOICE AND SPEECH TECHNOLOGIES INC. 14
AUSTIN RADIOLOGICAL ASSOCIATION PA 7
AVAYA INC. 54
BAE SYSTEMS INFORMATION TECHNOLOGY 43
BAERLOCHER PRODUCTIONS USA LLC 7, 24
BAYLOR UNIVERSITY 16
BEA SYSTEMS INC. 40
BRIGHAM YOUNG UNIVERSITY 21
BROWN RUDNICK BERLACK ISRAELS LLP 54
BUNKER HILL COMMUNITY COLLEGE 54
BUSINESS OBJECTS SA 14
CALIFORNIA DEPARTMENT OF MOTOR VEHICLES 60
CALLMINER INC. 20
CAREGROUP INC. 16
CAST SOFTWARE INC. 22
CATERPILLAR INC. 6
CBH INC. 20
CENTER FOR PROJECT MANAGEMENT 43
CHECK POINT SOFTWARE TECHNOLOGIES LTD. 40
CISCO SYSTEMS INC. 20, 54, 56
CLOAKWARE INC. 8
CODE GREEN NETWORKS INC. 8
COMPUSA INC. 56
COMPUTER SCIENCES CORP. 6
COMPUWARE CORP. 8
CORNER BANCA SA 7, 24
COUNTERPATH SOLUTIONS INC. 8
CUTTER CONSORTIUM 56
DEFENSE ADVANCED RESEARCH PROJECTS AGENCY 36
DELL INC. 7, 14, 16, 24
DELOITTE & TOUCHE LLP 48
DELOITTE CONSULTING LLP 48
DEUTSCHE TELEKOM AG 8
DIEBOLD ELECTION SYSTEMS INC. 60
DIMENSION DATA 14
DU PONT CO. 6
EGAIN COMMUNICATIONS CORP. 35
ELECTION SYSTEMS & SOFTWARE INC. 60
ELECTRONIC DATA SYSTEMS CORP. 12
ELOYALTY CORP. 20
EMC CORP. 7, 24
EMCOR FACILITIES SERVICES INC. 43
EMCOR GROUP INC. 43
ENDPOINT TECHNOLOGIES ASSOCIATES INC. 16
ENTERPRISE APPLICATIONS CONSULTING 20
ENTERPRISE STRATEGY GROUP INC. 7
FARPOINT GROUP 16
FEDERAL COMMUNICATIONS COMMISSION 36
FORRESTER RESEARCH INC. 16, 35
FRONTRANGE SOLUTIONS INC. 20
GARTNER INC. 6, 20, 30
GENESYS TELECOMMUNICATIONS LABORATORIES INC. 35
GLOBAL COMFORT SYSTEMS 20
GOOGLE INC. 40
GOVERNMENT ACCOUNTABILITY OFFICE 23
GREEN RIVER COMMUNITY COLLEGE 52
HARLEY-DAVIDSON INC. 15
HARRIS CORP. 1
HARVARD MEDICAL SCHOOL 16
HARVEY NASH PLC 16
HEADSTRONG CORP. 16
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IBM 6, 7, 15, 24, 30
IDC 14, 22
ILLUMINATA INC. 21
INFOSYS TECHNOLOGIES LTD. 6
INFRA CORP. 30
ING INVESTMENT MANAGEMENT LLC 30
INOVANT INC. 12
INQUIRA INC. 40
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS INC. 36
INTEGRATION CONSORTIUM 56
INTEL CORP. 1, 7, 24
INTERMOUNTAIN HEALTH CARE INC. 21
INVER HILLS COMMUNITY COLLEGE 54
IONA TECHNOLOGIES INC. 40
IRON MOUNTAIN INC. 48
IT GOVERNANCE INSTITUTE 38
ITSEC ASSOCIATES LTD. 12
JPMORGAN CHASE & CO. 12, 30
JUPITERRESEARCH 24, 35
KANA SOFTWARE INC. 35
LEON COUNTY COMMISSION 60
LEVERAGE PARTNERS INC. 56
LG ELECTRONICS INC. 14
LIBERTY MUTUAL GROUP INC. 30
LIGHTHOUSE SEMINARS LLC 56
LONG & FOSTER REAL ESTATE INC. 43
MANPOWER INC. 48
MCAFEE INC. 12, 38
MERCURY INTERACTIVE CORP. 30
MICROSOFT CORP. 1, 8, 12, 16, 20, 21, 24, 30, 38, 40, 52, 62
MIT 12
MYSQL AB 8
NATIONAL WORKFORCE CENTER FOR EMERGING TECHNOLOGIES 52,54
NAVAL POSTGRADUATE SCHOOL 38
NETWORK APPLIANCE INC. 7
NETWORKED INFORMATION SYSTEMS LLC 54
NICE SYSTEMS LTD. 20
NLAYERS INC. 29
NOKIA CORP. 34, 35
NORTEL NETWORKS CORP. 54
NORTH BAY BANCORP 43
NORTHWEST AIRLINES CORP. 54
NOVELL INC. 21
NU SKIN ENTERPRISES INC. 21
OFFICE OF THE U.S. TRADE REPRESENTATIVE 14
OPEN COMPLIANCE & ETHICS GROUP INC. 48
ORACLE CORP. 16, 20, 30, 35, 40
OUELLETTE & ASSOCIATES 43
OVERSTOCK.COM INC. 21
PACKETEER INC. 29
PALM INC. 62
PANTECH & CURITEL COMMUNICATIONS INC. 14
PARADIGM MANAGEMENT SERVICES LLC 12
PATNI COMPUTER SYSTEMS LTD. 6
POWERCHIP SEMICONDUCTOR CORP. 14
PRICELINE.COM INC. 34
PROCLARITY CORP. 8
PROJECT MANAGEMENT INSTITUTE INC. 43
QUALCOMM INC. 14
QUIXTAR INC. 30
RIGHTNOW TECHNOLOGIES INC. 35
ROTHMAN CONSULTING GROUP INC. 43
SALT LAKE COMMUNITY COLLEGE 21
SAMSUNG ELECTRONICS CO. 14
SANYO ELECTRIC CO. 14
SAP AG 8, 14, 40
SAS INSTITUTE INC. 14
SEQUOIA VOTING SYSTEMS INC. 60
SERVICE EXCELLENCE RESEARCH GROUP LLC 34, 35
SIBER SYSTEMS INC. 40
SITEADVISOR INC. 12
SKYHOOK WIRELESS INC. 8
SMARTMETRIC INC. 8
SPRINT NEXTEL CORP. 16
STEELTRACE 8
STORABILITY SOFTWARE 8
STORAGE NETWORKING INDUSTRY ASSOCIATION 24
STORAGE TECHNOLOGY CORP. 8
STREAMLINE SOLUTIONS 20
SUN MICROSYSTEMS INC. 8
SUSE LINUX AG 21
SYBASE INC. 40
SYMANTEC CORP. 12, 30
TAIWAN SEMICONDUCTOR MANUFACTURING CO. 12
TATA CONSULTANCY SERVICES LTD. 6
TD AMERITRADE HOLDING CORP. 7, 24
TEKELEC 12
TELELOGIC AB 30
THE BOEING CO. 54
THE DOW CHEMICAL CO. 6
THE PEP BOYS – MANNY, MOE & JACK 15
THE QUIZNOS MASTER LLC 20
TOM WALSH CONSULTING LLC 12
TROUX TECHNOLOGIES INC. 30
U.S. CENSUS BUREAU 1, 16, 17
U.S. DEPARTMENT OF DEFENSE 36
U.S. DEPARTMENT OF JUSTICE 38, 60
U.S. DEPARTMENT OF THE NAVY 37
U.S. FOOD AND DRUG ADMINISTRATION 22
U.S. MARINE CORPS 38
U.S. SECURITIES AND EXCHANGE COMMISSION 23
UBISOFT ENTERTAINMENT SA 35
UNIPRISE INC. 20
UNISYS CORP. 16
UNITED PARCEL SERVICE INC. 16
UNITEDHEALTH GROUP INC. 20
UTILITY SERVICE CO. 35
UTILITY SERVICE GROUP INC. 35
UTOPY INC. 20
VERINT SYSTEMS INC. 20
VIRSA SYSTEMS INC. 14
VISA INTERNATIONAL INC. 12
VONAGE HOLDINGS CORP. 8
WEBASTO PRODUCT NORTH AMERICA INC. 20
WELLS FARGO & CO. 6
WILSON LANGUAGE TRAINING CORP. 20
WORLD TRADE ORGANIZATION 14

ADVERTISERS' INDEX

AT&T 2, 3
www.att.com
Best Practices in Storage 55
www.snwusa.com
CA 17
www.ca.com
Capella University 42
www.capella.edu
CDW Corporation 22, 23
www.cdw.com
Cingular 9
www.cingular.com
dtSearch 57
www.dtsearch.com
EMC 49
www.emc.com
FileNet 53
www.filenet.com
IBM Software .... 18-19, 26, 27, 32 .... 33, 44, 45, 50, 51
www.ibm.com
INTEROP 41
www.interop.com
InterSystems Ensemble 28
www.intersystems.com
IT Executive Summit 61
www.itexecutivesummit.com
Microsoft SQL Server 10, 11
microsoft.com/bigdata
MRO 47
www.maximoit.com
Network Instruments 57
www.networkinstruments.com
Pillar Data Systems 13
www.pillardata.com
Ricoh 15, 21
www.ricoh-usa.com/itchannel
SAS 4
www.sas.com
Seagate 63
www.seagate.com
SonicWALL 39
www.sonicwall.com
Sterling Commerce 31
www.sterlingcommerce.com
SunGard Availability Services 24/25*
www.sungard.com
Sybase 64
www.sybase.com
Xenos 37
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Florida Wants Answers From E-voting Vendors

Issues subpoenas to find out why three aren't doing business with Leon County

BY MARC L. SONGINI

FLORIDA ATTORNEY General Charlie Crist last week issued subpoenas to three electronic voting machine manufacturers in an effort to find out why each of them has refused to do business with the state's Leon County.

The subpoenas are part of an investigation started by Crist's office in February after the vendors' alleged snub of the county indirectly caused it to be in violation of Florida and federal election laws.

The subpoenas issued to Election Systems & Software Inc. (ES&S), Diebold Election Systems Inc. and Sequoia Voting Systems Inc. are seeking copies of documents related to their sales of e-voting machines in Florida since 2003.

Crist said the probe was launched to determine whether the companies, which have done business throughout Florida over the past three years, privately agreed to withhold their gear from Leon County and its elections supervisor, Ion Sancho.

"These subpoenas are to ensure that the rights of our voters with disabilities, as well as all Florida voters, are secured," Crist said in a statement.

The relationship between Sancho and voting machine vendor Diebold has been rocky in recent months as the elections supervisor has become an outspoken critic of touch-screen voting systems.

In December, the Leon County Commission — at Sancho's urging — voted to replace its Diebold AccuVote optical-scan gear. Sancho cited concerns about the security of the systems and their inability to adhere to federal Help America Vote Act requirements and state election laws.

Days after the vote to replace the Diebold machines, Sancho reached an informal agreement to buy $1.8 million worth of voting equipment from ES&S. That deal fell through a month later, leaving the county facing an order from the Florida secretary of state's office to repay a $500,000 grant that had been earmarked for the machines.

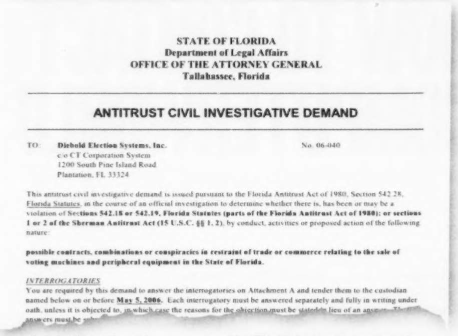
Sancho suggested that the vendors refused to sell their machines to Leon County "because they could. The laws of Florida offer no protection to elections officials."

The vendors had varying responses to the attorney general's action.

Diebold declined to comment on the subpoenas, but a spokesman contended that the company did not refuse to sell equipment to Leon County; rather, the relationship was terminated by Sancho.

ES&S also said it is reviewing the questions and document requests. A spokesman said only that "after evaluating all of the information available to us, we reluctantly determined that we could not expect to have an effective partnership with [Leon County]."

Sequoia said that the complaint is without merit and promised to fully cooperate with any government investigation. ▸



STATE OF FLORIDA
Department of Legal Affairs
OFFICE OF THE ATTORNEY GENERAL
Tallahassee, Florida

ANTITRUST CIVIL INVESTIGATIVE DEMAND

TO: **Diebold Election Systems, Inc.**
c/o CT Corporation System
1200 South Pine Island Road
Plantation, FL 33324

No. 06-040

This antitrust civil investigative demand is issued pursuant to the Florida Antitrust Act of 1980, Section 542.28, Florida Statutes, in the course of an official investigation to determine whether there is, has been or may be a violation of **Sections 542.18 or 542.19, Florida Statutes (parts of the Florida Antitrust Act of 1980); or sections 1 or 2 of the Sherman Antitrust Act (15 U.S.C. §§ 1, 2)**, by conduct, activities or proposed action of the following nature:

possible contracts, combinations or conspiracies in restraint of trade or commerce relating to the sale of voting machines and peripheral equipment in the State of Florida.

INTERROGATORIES
You are required by this demand to answer the interrogatories on Attachment A and tender them to the custodian named below on or before **May 5, 2006**. Each interrogatory must be answered separately and fully in writing under oath, unless it is objected to, in which case the reasons for the objection must be stated in lieu of an answer. answers must be

A page from the subpoena issued by Florida's attorney general.

Continued from page 1

Voters

— or 43% — were "kicked out," or rejected, in Los Angeles County between Jan. 1 and March 15. Such results have election officials statewide fearing that the new registration system will bump eligible voters from the voter rolls.

The problems could first affect a small number of local elections starting this month, including a special congressional election tomorrow in San Diego County.

The registration database, run by Secretary of State Bruce McPherson, was mandated by the federal Help America Vote Act (HAVA). The law requires that each state establish a centralized voter registration database.

In an e-mail response to questions, a spokeswoman for McPherson wouldn't provide technical details of the system, nor would she talk about the nature of the problems. She did note that 74% of voter registrations are cleared on the first try. The rest, she said, require manual validation by county elections workers.

Strict Criteria

Elaine Ginnold, registrar of voters for Alameda County, said the rejection rate there hovers around 10%, a total that would be expected with any new system. However, she also noted that the new system could kick out eligible voters.

County election officials said the new registration system requires that potential voters provide a driver's license number or other identifying information to a county registrar. The data is keyed into a local database and periodically uploaded to the new centralized system, which matches it with information from the California Department of Motor Vehicles and other agencies to verify that it's authentic.

The rigorous system will reject applications whose data doesn't exactly match the confirming documents. Even small discrepancies, such as a missing middle initial, could cause an application to be rejected.

"My main concern is there could be 20,000 to 30,000 new registration cards delivered to Alameda County at the registration deadline," Ginnold said. The deadline for the state election is May 22.

The registration information takes a week to process into the Alameda database before being sent to the state database for matching, which can take up to five days, Ginnold said. "We would get the kick-outs only a few days before the election — which won't allow enough time to manually validate them," she said.

The potential problems have provided fodder for McPherson's critics, who claim that he selected rigid guidelines that could unfairly penalize voters.

The voter database has "been a disaster for anyone who is trying to register for the first time or reregister because they moved, got married and need to change their name or change parties," said California State Sen. Debra Bowen, who held a hearing last week on the matter. A spokesman for Bowen said the rejection rate should be between 1% and 2%.

The U.S. Department of Justice, which enforces HAVA, worked with McPherson's office as the system was being crafted.

The secretary of state's office has set up processes to offer guidance to counties and voters on fulfilling the new requirements, McPherson's spokeswoman said. He has also proposed legislation to "provide common-sense flexibility so that no eligible voter should be denied the opportunity to vote because of a technicality," she said.

Ginnold said that ultimately, a centralized database that has a single entry for each voter can successfully prevent fraud. Previously, election officials relied on local databases and registration rules, and exact matches weren't required.

"The goal is excellent, and we shouldn't lose sight of that," Ginnold said. "The road is a little rocky now." ▸

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Summit Agenda

7:45am – 8:15am	**Registration and Networking Breakfast**
8:15am – 8:30am	**Introduction and Overview** Julia King, National Correspondent and Executive Editor, Events, Computerworld
8:30am – 9:15am	**Market Outlook and Trends** Jon Toigo, Managing Partner, Toigo Partners International
9:15am – 9:45am	**IT End-User Case Study: Austin Radiological Association** Todd Thomas, Chief Information Officer, Austin Radiology Association
9:45am – 10:00am	**Refreshment and Networking Break**
10:00am – 10:30am	**Technology Presentation** Claude Lorenson, Group Product Manager, Storage, Microsoft Corporation
10:30am – 11:00am	**IT End-User Case Study: Franklin W. Olin College of Engineering** Joanne Kossuth, Chief Information Officer, Franklin W. Olin College of Engineering
11:00am – Noon	**IT End-User Panel Discussion** Moderator: Julia King, National Correspondent and Executive Editor, Events, Computerworld Panelists: Paul Stubitsch, Corporate IT Director, Wilbert, Inc.; Todd Thomas, Chief Information Officer, Austin Radiology Association; Joanne Kossuth, Chief Information Officer, Franklin W. Olin College of Engineering

Optional Afternoon Sessions

Noon – 1:00pm	**Optional Luncheon**
1:00pm – 2:30pm	**Speed Dating with Solution Partners**

Selected speakers include:

Todd Thomas
Chief Information Officer, Austin Radiology Association

Joanne Kossuth
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Jon Toigo
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Gotta Have It

IS BOOT CAMP really Apple's big play for the enterprise desktop? Naaah. The enterprise desktop is a commodity world. The commodity PC market is a cutthroat business with razor-thin margins in which vendors have no way to differentiate themselves except with low prices. Apple doesn't do commodities. Apple sells comfort and convenience to midmarket users and luxury to the high end. But the commodity desktop? Fuggedaboudit.

There — that was easy, wasn't it? And now that the bogus question of the week is out of the way, let's look at the biggest reason Boot Camp *does* matter to corporate IT shops.

Here's a hint: You'll find him sitting in a corner office.

You know who I mean. Maybe he's your CEO. Maybe he's some other can't-say-no-to-him executive. The one who's got to have the pricey laptop that never leaves the office. And the big, expensive LCD monitor that never displays more than one window at a time. And the best — or at least spendiest — of everything else.

In the past, when Mr. Gotta Have It wanted one of those stylish Macinthings, you could beg off with the fact that it didn't work with your corporate e-mail system, corporate intranet and key corporate applications. Now that excuse is gone. With all the press coverage of Boot Camp, every Gotta Have It knows this isn't merely a hacker gimmick or a sorta kinda maybe imitation. It's real Windows XP. It can run all your standard corporate stuff.

More important, it's too expensive for the rabble to have in their cubicles. Ergo, it's a status symbol. Gotta have it.

And you've got to support it. Maybe just the one, maybe a few more if it catches on as a much-desired executive perk. Don't worry, the Macs won't spread too widely. The Gotta Have It crowd won't want everybody to have one, or it'll lose its value as a status symbol.

No, don't fight this. Let your big wheels have their toys. The Gotta Have Its can pay for them out of their own budgets. And they'll also subsidize the expertise you'll need for the Mac users doing *real* work.

Hey, I said they were the biggest reason — not the most important.

See, while those big wheels see this as executive bling, some of your little-cog users are buying Macs as home computers. It's the iPod effect: They buy iPods, they love 'em, they form brand affinity for Apple, they decide to give Macs a try.

That is, after all, why Apple is adding the ability to run Windows to Mac OS: to make the transition a little easier for users who'd like to switch to Macs but are worried about losing their old PC files and applications. Boot Camp takes away some of the risk, letting users cross the chasm at their own pace and jump back whenever they feel the need to.

That's no way for Apple to take over the enterprise. Heck, it's unnecessary: When the whole organization changes operating systems, the IT shop manages the transition. In fact, that kind of flexibility is a bad idea in a large-scale transition, where nobody *wants* individual users to hesitate or double back.

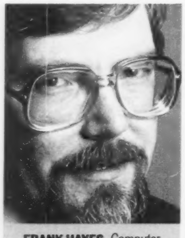
But when individual users need help logging in from home with their new Macs, that flexibility will come in very handy. Instead of the completely alien Macs that you just couldn't deal with in the past, your help desk will be able to treat them pretty much like any other Intel-based desktop PC running the latest version of Windows.

And better still, whatever tricky little hitches may show up, your help desk will have a big head start on solving them — thanks to every Gotta Have It who's already demanded support for Boot Camp.

Everybody wins: Your corner-office Gotta Have Its are happy because they get their fancy status symbols. Your regular users are happy because they get more choices and better support from IT.

And IT? We're happy that, even with Boot Camp, Apple isn't about to make a big play for the enterprise.

Just a few little corners of it. ◗



FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com**.

Staying Awake Is Job One

New company policy expressly forbids all non-business-related Web use, and it's enforced with new firewall and filter settings. Just after it kicks in, second-shift plant supervisor tracks down IT pilot fish to ask why he can't access his ISP's Web site. Fish: Why do you need to access that site? Supervisor: "I need it for my job." Fish: Right. Did you read the revised policy that says you can't surf the Web for anything other than business-related stuff? Supervisor: "Yeah, but it's nice to keep up with current events, since I'm stuck here all night."

SHARK TANK

Safety First

Contingent of big-deal prospective clients is getting the grand tour at this consulting firm, and the sales manager decides to add the server room to the itinerary, reports a pilot fish watching from the sidelines. With five visitors from the would-be client and five big shots from the firm crowded into the room, sales guy explains, "This is our state-of-the-art server room. You will have noticed the biometric access control panel while coming in. Our clients can be sure of their data being completely safe with us – no one except members of our IT infrastructure team who have high-level security clearance can enter this room." Which is when one of the visitors chimes in: "If that's the case, how come we're in here now?"

That's Not Quite The Way It Works

Software developer calls database admin pilot fish with a problem: "When I try to run the 'All items – past 12 weeks' query, I get an internal server error. Hmm, says fish, can you duplicate the error on a test server? Developer: "I can't get into either one of the test servers. And even if I could get into them, this query is so new that it won't exist in either of these test environments."

Perfect Storm

Three users separately call support pilot fish, and each of them has the same complaint: Someone else is overwriting their appointments and address books in Microsoft Exchange. "Not possible," fish says, knowing that Exchange is designed to prevent that kind of information leakage unless users explicitly share their information. Which is almost right. "Turns out it *is* possible if all three are using Palm handhelds," sighs fish. "And if they're all syncing their addresses and appointments with Exchange using the infrared capability. And they all sit in adjacent cubicles. And they all sync by holding their Palms upright, pointed at the white ceiling."

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